TO 00-20-2

TECHNICAL MANUAL

MAINTENANCE DATA DOCUMENTATION

Prepared By: Automated Technical Order System (ATOS)

FOR QUESTIONS CONCERNING TECHNICAL CONTENT OF THIS TECHNICAL MANUAL, CONTACT H-Q AFMC/ENBP, WPAFB, OH.

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CHAPTER 1

OBJECTIVES AND USES OF THE MAINTENANCE DATA DOCUMENTATION PROCESS

1-1   INTENT.

The intent of this Technical Order (TO) is to provide policy and/or guidance to the functional user for the use and operation of the Maintenance Data Documentation (MDD) process. This TO also provides for the collection and storage of maintenance data for aircraft, spacelift assets, air launched and Intercontinental Ballistic Missiles (ICBMs), drones, engines, Communications-Electronics (C-E) and meteorological equipment, Support Equipment (SE), Aerospace Ground Equipment (AGE), Nuclear Ordnance Commodity Management (NOCM) materiel, Reentry Vehicles and Reentry Systems (RV/RS), related training, test, handling and support equipment, Real Property Installed Equipment (RPIE) utilizing the Core Automated Maintenance System (CAMS), and other reporting systems.

1-1.1   This TO is to be used in conjunction with the appropriate data system user's manual to ensure proper procedures are applied.

1-1.2   This TO does not address the operation of the input and retrieval procedures. The mechanics of those processes are covered under major command directives, user's manuals, and guide books.

NOTE

> All users of MDD systems must ensure that records do not include classified information. Major commands are responsible for providing guidance for reporting MDD during deployments or contingency operations when current data or locations may be detrimental to operations security. Handle data IAW AFPD 31-4.

1-2   PURPOSE.

The purpose of this TO is to:

1-2.1   Provide a broad understanding of the objectives, scope, concept, and policy of MDD; and some intended uses of the data it contains.

1-2.2   Prescribe the rules for documenting entries on weapon systems, support systems, and equipment that has been selected for reporting by the equipment manager, as indicated by the MICAP/MDD/TCTO settings on the SRD.

1-2.3   Explain the Visibility and Management of Operating and Support Cost (VAMOSC), CAMS, Improved Maintenance Management Program (IMMP), Precision Measurement Equipment Laboratory Automated Management System (PAMS), CAMS for Mobility (G081), Reliability and Maintainability Information System (REMIS), and Comprehensive Engine Management System (CEMS).

1-2.4   Provide an authoritative source for certain codes used and entries required in the MDD process.

1-2.5   Provide reporting rules and documentation for cannibalization actions.

1-2.6   Provide policy and/or guidance for the individual maintenance activities (chapter 8) for the collection and documentation of maintenance data. Maintenance personnel using this TO should be familiar with their related major command implementing directives, TOs, user's manuals, and the following:

- AFCSM 21-5XX, Vol. 2 CAMS
- AFI 21-101 Maintenance Management Policy (MMP)
- AFI 21-108 Space Command
- AFI 21-114 ICBM
- AFI 21-116 Maintenance Management of C-E

1-3   OBJECTIVES.

1-3.1   The objectives of the MDD process are to provide a vehicle for: collecting, storing, and retrieving base-level, depot-level, and contractor-type maintenance data. Data is used in support of the USAF equipment maintenance program, reliability and maintainability improvement program, and the maintenance management system procedures.

1-4   SCOPE.

The MDD process begins with the follow-on Operational Test and Evaluation (OT&E) cycle (AFI 99 series), and extends through the operational phase of the life cycle of equipment. Additional rules and procedures are in Air Force documents, user manuals, and major commands implementing directives that further bound the scope of the MDD process as it applies to base-level maintenance production involving labor.

1-4.1   The scope of MDD includes:

1-4.1.1   All functions outlined in AFI 21-series and major commands implementing directives.

1-4.1.2   All functions maintaining training equipment listed as MDD reportable in the Standard Reporting Designator (SRD) table.

1-4.1.3   Contractors, if specified in the contract.

1-4.1.4   Depot activities, when accomplishing maintenance on MDD reportable equipment.

1-4.1.5   Historical Documentation.

1-4.2   Rules for reporting maintenance activities on:

- Direct labor

- On and off-equipment maintenance

- Serially controlled items

- Peculiar maintenance actions

- Time-change items

1-5   CONCEPT.

The MDD process includes collection, storage and retrieval. The process provides for the data collection and monitoring of maintenance discrepancies. Rules and regulations govern the operations of each process. There are, however, several systems that are utilized for the input of MDD data. While each of these systems must follow the basic rules for the composition of the data elements and data entries, the procedures for data entry and operation of the following systems are contained in their user manuals and related documents:

- G081 CAMS for Mobility

- G054 CAMS

- G099 REMIS

- A400 IMMP

- D042 CEMS

- Q011 PAMS

1-5.1   As the processes operate within specified rules and procedures, essentially the following takes place:

1-5.1.1   During the collection process, data about maintenance production is entered and verified for accuracy.

1-5.1.2   This process allows for short and long term (historical) storage of data and the on-line and hard copy retrieval of data through user inquiry.

1-6   INTENDED USES OF DATA.

MDD data is intended for use at the site where data is collected and off site by Air Force Management and Engineering Agency (AFMEA), major commands, and DoD.

1-6.1   On the base, the intended use of the base-level maintenance production data is to provide information feedback to base managers and supervisors for controlling the maintenance operation.

1-6.1.1   In CAMS, this information can be obtained through use of standard reports. Tailored reports may also be obtained through use of a Query Language Processor (QLP), and the Interactive Query Utility (IQU). Examples of information that can be retrieved are:

1-6.1.1.1   Production information about the type of work accomplished, the work center that did the work, and the equipment on which the work was accomplished.

1-6.1.1.2   Equipment maintenance schedules and inventory information for maintenance actions that are required on a calendar basis.

1-6.1.1.3   Productive and labor hour expenditures in either detailed or summary form. This includes labor expended to support other organizations or special projects.

1-6.1.1.4   Equipment failures and discrepancy information. This information is available in composite form by type of equipment and for individual equipment items.

1-6.1.1.5   A by-product of MDD is the maintenance of the actual configuration as it pertains to serial tracked and time-change items. Through MDD the current configuration status of the weapon system is maintained.

1-6.1.1.6   In addition, base maintenance managers and supervisors may obtain information concerning operational and support costs, except for C-E equipment, and ICBMs from the VAMOSC system which is described in chapter 2 of this TO.

1-6.1.1.7   Base maintenance managers and supervisors may also query REMIS for like equipment maintenance and operational data at its own or other base locations.

1-6.1.1.8   In G081, reports can be generated in the FOCUS program.

1-6.2   Off base, the intended use of the data within the MDD process is for information to manage various programs established by AF and major air command regulations and manuals.

1-6.2.1   The AFMC has been designated as overall materiel manager for AF systems/equipment. This management requires all levels of maintenance production data. The data is used to:

1-6.2.1.1   Identify reliability, maintainability, and availability problems on AF equipment.

1-6.2.1.2   Establish priorities for product improvement actions.

1-6.2.1.3   Account for modifications to AF equipment and evaluate the effectiveness of modifications.

1-6.2.1.4   Validate inspections and time-change requirements and/or intervals.

1-6.2.1.5   Identify safety deficiencies and monitor corrective actions.

1-6.2.1.6   Validate or adjust calibration intervals.

1-6.2.1.7   Validate spares requirements.

1-6.2.1.8   Identify programmed depot maintenance requirements.

1-6.2.1.9   Evaluate deficiency reports and modification proposals from other commands or industry.

1-6.2.1.10   Compute the cost for billing the Air Mobility Command and the Air National Guard (ANG) for reimbursable depot-level maintenance.

1-6.2.1.11   Determine TCTO kit distribution requirements and TCTO rescission dates.

1-6.2.1.12   Evaluate compliance with warranties.

1-6.2.1.13   Provide for configuration control and/or management.

1-6.2.1.14   Determine Test Measurement and Diagnostic Equipment (TMDE) maintenance intervals.

1-6.2.2   In addition to using the data for internal AFMC management of AF equipment, AFMC provides:

1-6.2.2.1   Data on the performance and support requirements of current inventory equipment for industry to use in developing new systems and equipment.

1-6.2.2.2   Data for reports requested by HQ USAF, the Departments of the Army and the Navy, the Inspector General (IG) (for accident investigation) and the major commands.

1-6.2.2.3   Data sent to appropriate agencies requiring comparable data used by AFMC.

1-6.2.2.4   Data on AF-wide repair capability to bases, major commands, and HQ USAF for the assessment and improvement of maintenance repair capabilities.

1-6.2.3   Data for Operational command and control systems.

1-6.2.4   Data for HQ USAF accounting and finance for determining the cost of base-level maintenance operations.

1-6.3   At one time MDD was also used to determine manpower requirements. Although it is still a consideration in these computations it is not the primary source for decisions. MDD man-hours must NOT be used for manning decisions.   Maintenance man-hours are used to determine repair times and cost to operate systems. Work centers must not inflate repair actions to account for personnel as this data is used for other management decisions.

1-7   ACCURACY OF DATA.

For MDD to be useful to its many users, it is essential that the data in the system be accurate. To ensure accuracy and completeness, workcenter and shift supervisors are responsible for reviewing (on a daily basis) the data entered into the system by personnel under their control.

1-8   DATA EDITS AND STANDARD TABLES.

REMIS transmits the following edit tables to field maintenance management information systems (MMIS): action taken, command, how malfunction, when discovered, type maintenance, work unit, Master Job Standard Number (MJSN) and SRD codes. REMIS tableS will take precedence whenever a conflict arises between the published table and the REMIS tables. If there are questions between the data in the MMIS and the TO, contact the work unit code (WUC), MJSN or SRD focal point at the appropriate Center and HQ AFMC/ENB for other tables.

1-9   BENEFITS.

The information provided through the MDD process is used in the management decision making process which results in many tangible benefits to the Air Force. These benefits are not always readily apparent to the individual involved in the documenting of data. However, a large portion of the cost of the MDD process is returned through improved reliability, maintainability, and availability of AF equipment.

1-10   AUTOMATED MDD SYSTEMS.

When automated MDD systems are available, data will be input using procedures outlined in appropriate user manuals or directives. When an automated system is not available, manual methods will be used in conjunction with manuals or directives to the greatest extent possible.

NOTE

Tables used throughout this TO are included both to indicate documentation rules and denote non-automated methods.

CHAPTER 2

RELATED DATA SYSTEMS

2-1   VISIBILITY AND MANAGEMENT OF OPERATING AND SUPPORT COST (VAMOSC).

2-1.1   <u>Purpose:</u> The VAMOSC system was developed to improve management's decision making capability by compiling, consolidating, and maintaining a broader range of historical Operating and Support (O&S) cost data. VAMOSC provides the visibility of weapon systems' O&S cost so that others may manage these costs within the life cycle cost process. It uses information provided by the MDD process to achieve this purpose.

2-1.2   <u>Objectives:</u> The objectives of the VAMOSC system are:

2-1.2.1   To provide the DoD and USAF with visibility of O&S costs at the Mission, Design, and Series (MDS) and component WUC levels for aircraft, and the Type, Model, and Series (TMS) level for ground C-E equipment.

2-1.2.2   To provide the means to collect, maintain, and portray historical O&S cost data for weapon systems in terms of cost elements most useful to DoD and AF management requirements that are related to the Cost Analysis Improvement Group (CAIG) format.

2-1.2.3   To expand AF weapon system O&S cost Management Information Systems (MIS) to obtain detailed data on weapon systems, subsystems, and replaceable component maintenance costs for use in making equipment replacement or modification decisions. Maintenance cost elements (labor, materiel, and support) must be identified for the subsystem and replaceable components which comprise system maintenance costs.

2-1.2.4   To provide improved logistics support cost information for use in acquisition planning, tradeoff analysis studies, and budget requirements submissions.

2-1.2.5   To provide the capability to display this information in standard report formats and also provide demand type reports reflecting only particular user requirements to fulfill a specific purpose.

2-1.2.6   To contribute to the reduction of initial support costs by providing the capability to assimilate, portray, and retain for historical reference the cost of resources (labor, materiel, services, and overhead) directly and indirectly associated with base and depot logistics of aircraft subsystems and components.

2-1.2.7   To maintain a historical database for a minimum of 10 years.

2-1.2.8   To provide cost information to improve logistics policy decisions.

2-1.2.9   To identify system component reliability, effectiveness, and costs so that high support cost items may be identified and addressed.

2-1.3   <u>Scope:</u> There are three components in the VAMOSC program as described in AFR 400-31, Volumes I-IV. These components are the Weapon System Support Cost System (WSSCS), the Component Support Cost System (CSCS), and the C-E; system which is currently suspended. VAMOSC is a MIS for collecting O&S costs and relating them to the MDS and/or TMS level for aircraft and C-E systems. In addition, it relates costs to components for aircraft and engines through use of a National Stock Number (NSN) and/or WUC cross reference file. The system is available to all DoD components for on-line access cost reports on menu driven interface.

2-1.4   <u>Concept:</u> Certain incoming data for the C-E, WSSCS, and CSCS systems are edited, validated, selected, and rearranged through a preprocessor subsystem called Visibility and Management Overhead (VAMOH) subsystem. VAMOH accepts input data at designated times during the year in order to produce current data at the annual processing time. VAMOH is used to build consolidated data files into logical groups for processing. It should be noted that there are differences among the three VAMOSC systems in compiling costs. WSSCS, CSCS, and C-E systems use different sources and algorithms in making cost collections and apportionments. WSSCS reports costs according to the CAIG cost categories and CAIG cost

definitions. CSCS does not report by the CAIG elements since it deals with aircraft component, maintenance, and materiel costs. C-E does not report in accordance with the CAIG cost categories, but is closely aligned to those categories. WSSCS portrays partial costing on almost all aircraft in the active inventory. The number of aircraft for which total costing is shown is driven by the Weapon System Cost Retrieval System (WSCRS) (WSCRS, H036C). Depot maintenance costs, and therefore total costing, is available for approximately 100 MDSs. Partial costing is available for approximately 50 other MDSs. Component support cost system provides cost on 120 aircraft. The aircraft that are costed were identified by HQ ITSAF and correspond to the standard and/or actual table contained in the product performance system. WSSCS, CSCS, and C-E are not complementary systems. For example, MDS costs obtained from WSSCS at the MDS level cannot be supported with like data from the CSCS system because cost contents and methods of calculation are different. C-E collects costs by TMS and likewise uses different sources and methods of calculation.

2-1.5   Intended Uses of Data: The VAMOSC program has been developed as a repository of information for personnel throughout the AF as a tool to aid in accomplishing the following:

- Force and/or support program balance.

- Weapon system comparisons.

- Support resource planning.

- Design trade studies to set Reliability and Maintainability (R&M) goals.

- Logistics support alternatives.

- Affordability studies.

- Warranty and/or contractor support analysis.

- Equipment maintenance management.

2-1.6   Accuracy of Data: For VAMOSC, the control of accuracy is the selection of the most correct data sources to feed the system. If the source data systems are accurate, then VAMOSC will also be accurate. The MDD system is a key source of information used by the VAMOSC system. The WSSCS uses MDD data to allocate maintenance man-hours and costs to the correct MDS. The CSCS uses MDD data to allocate direct maintenance man-hours to the cost of operating and supporting aircraft components. The C-E system uses MDD data to correctly cost the maintenance effort to the applicable TMS.

2-1.7   Benefits: VAMOSC will provide decision makers Title a visibility of O&S costs that has never before been available. This visibility will enhance the decisions made by DoD and AF when attempting to identify the cost drivers of systems and subsystems that are experiencing a growth in O&S cost expenditures.

2-2   REMIS (G099).

2-2.1   Purpose: REMIS is designed to accumulate data and provide information necessary to support the AF equipment maintenance program outlined in AFI 21-101. REMIS will provide accurate, near-real-time data accessibility to all levels of management. Selected weapon system data from the MMISs will be transmitted electronically to REMIS. Increased data accuracy, timeliness, and accessibility will facilitate USAF development, implementation, and utilization of readiness initiatives, R&M programs, and other equipment maintenance management systems which keep AF equipment in serviceable condition, safely operable, and properly configured to meet mission needs.

2-2.2   Objectives:

2-2.2.1   Enhance front-end design and increase the readiness and sustainability of USAF weapon systems by improving the availability, accuracy, and flow of essential equipment maintenance information.

2-2.2.2   Develop REMIS as part of an overall AF equipment maintenance management information program under the Logistics Information Management Support System (LIMSS) architecture.

2-2.2.3   Designate REMIS as the primary AF database for collecting and processing equipment maintenance information and supporting the objectives of the R&M 2000 program.

2-2.2.4   Structure REMIS by weapon system or major equipment category (e.g., engines) using distributive processing techniques.

2-2.3   Scope: The three application subsystems of REMIS (Equipment Inventory, Multiple Status, Utilization Reporting Subsystem (EIMSURS), Product Performance Subsystem (PPS), and Generic Configuration Status Accounting Subsystem (GCSAS)) will provide uniform user interface, processing, and reporting capabilities. The EIMSURS, PPS, and GCSAS subsystems receive inputs from on-line users: CAMS, contractors, and other AF data systems, in both batch and on-line modes. AF organizations may query the database, update validation tables, download data, and perform other functions within the security and/or access limits established by their approved user Identifications (IDs) and database views. This is accomplished through the use of a menu-driven process with on-line help screens. REMIS maintains detailed and summary data on-line. Archived historical data is also available by contacting REMIS PMO.

2-2.4   Concept: The following discussion applies to the three application software programs: EIMSURS, PPS, and GCSAS.

2-2.4.1   EIMSURS - The EIMSURS will provide both detailed data and summary and/or historical data for all items of aerospace vehicles, Automatic Test Equipment (ATE), C-E, and selected SE, aerospace ground equipment, and missiles for all AF organizational levels that report equipment maintenance data. This subsystem performs the following four functions: inventory reporting, status reporting, utilization reporting, and Inventory/Status/Utilization (I/S/U) integration.

2-2.4.2   PPS - The PPS will provide the capability to evaluate maintenance actions, weapon system effectiveness and materiel deficiencies, thereby allowing management to identify equipment that requires corrective actions. This data will be primarily used by System Program Directors (SPDs), Item Managers (IMs), Equipment Specialists (ESs), and R&M analysts for identifying and resolving specific problem areas and for the improvement of resource utilization. The three main functions of PPS are MDD, equipment availability, and aircraft debriefing.

2-2.4.3   GCSAS - The GCSAS is a single unified information source for all AF weapon system configuration data. The GCSAS updates and integrates the functions of the Standard Configuration Management System (SCMS), the Advanced Configuration Management System (ACMS), the Commodity Configuration Management System (CCMS), and the B-1B Configuration Status Accounting System (CSAS). It absorbs the Embedded Computer System (ECS) software, the TCTO management and tracking software, and provides Computer Program Identification Number (CPIN) status and tracking.

2-2.5   Intended Uses of Data: The REMIS program has been developed as a repository of R&M information for personnel throughout the AF as an aid in accomplishing the following:

2-2.5.1   EIMSURS:

2-2.5.1.1   Allocate flying hours and/or sorties per MDS and Program Element Code (PEC).

2-2.5.1.2   Monitor the utilization and/or operation of the fleet.

2-2.5.1.3   Determine aircraft configuration identification.

2-2.5.1.4   Provide selected weapon system status information.

2-2.5.2   PPS:

2-2.5.2.1   Failure analysis and/or trending.

2-2.5.2.2   Warranty and/or guarantee tracking support.

2-2.5.2.3   Evaluate equipment maintenance concepts and plans.

2-2.5.2.4   Identify causes of high downtime or excessive support impacts.

2-2.5.2.5   Gauge weapon system support.

2-2.5.2.6   Aircraft debriefing analysis.

2-2.5.3   GCSAS:

2-2.5.3.1   Provide cradle-to-grave tracking of serially-controlled configuration items.

2-2.5.3.2   Administration and management of TCTO data.

2-2.5.3.3   Administration and management of approved configuration data.

2-2.5.3.4   Administration and management of actual configuration and time-change inspection data.

2-2.6   Accuracy of Data: CAMS data will be validated prior to entry into the database by tables pushed down to the source of entry. Mathematical calculations will be one hundred percent accurate to four positions right of any decimal point, when the numbers are expressed in scientific notation. It is the intent of the AF that all MDD systems should have the same edits and use the same push down tables.

2-3   CAMS (G054)

2-3.1   Purpose: CAMS is the AF primary, production-oriented, base-level automated MMIS. The system supports all aircraft, Spacelift Assets, C-Es, and S-E maintenance activities at bases worldwide, Air National Guard and Air Force Reserve sites, and selected North Atlantic Treaty Organization (NATO) locations. CAMS is designed to provide base-level maintenance personnel the capability to:

- input data as actions occur and receive information, upon demand, at remote terminals in the maintenance complex;

- receive and edit input data, store the data in the appropriate records and files, and produce management notices;

- produce reports that contain either summarized or detailed data;

- load all data relative to equipment to be maintained, the maintenance organization, its facilities and personnel to the computers' files as part of the initial system implementation;

- capture data necessary to update files and produce off-base reports as part of the scheduling and control process;

- aircraft database information for use in controlling and monitoring the on-going activity of maintenance and providing decision-making information tailored to specific needs.

CAMS automates aircraft history, aircraft scheduling, and aircrew debriefing processes and provides a common interface for entering base-level maintenance data into other standard logistics management systems.

2-3.2   Objectives: The objectives of the CAMS system are:

2-3.2.1   Eliminate and/or reduce nonproductive administrative tasks and improve efficiency.

2-3.2.2   To ensure that AF materiel is serviceable, operable, and properly configured.

2-3.2.3   Provide better capability for maintenance information programs and organizations to support AF peacetime and wartime missions.

2-3.2.4   Provide more accurate maintenance data needed to develop technical requirements, concepts, and plans supporting weapon system development.

2-3.2.5   Identify changing needs for the worldwide maintenance community in the areas of personnel, equipment, and subsystem technology.

2-3.2.6   Provide more responsive maintenance systems and methods to support changing operational needs.

2-3.2.7   Support senior maintenance managers in their need to better organize and train to support wartime operational missions in the most effective and productive manner.

2-3.3   Scope: CAMS is an event-oriented system. In most cases, data is entered to update the database as a result of some activity taking place in the maintenance environment. Retrieval of information from the database is dictated by the need of the functional user. This operating concept is implemented through on-line processing of data and the use of a networked database structure. On-line processing capability is provided by access to CAMS via remote terminals located in the work areas. The user may enter data or retrieve information as the need arises. As a result, the database is maintained in a current state at nearly all times and information retrieved reflects up-to-date conditions. Local managers can control their resources through the use of the following subsystems:

- CEMS

- ATE Reporting System

- C-E Equipment Status and Inventory Reporting
- Maintenance Events
- Trainer Reporting
- Location Management
- Job Data Documentation (JDD)
- Status and Inventory Reporting
- Operational Events
- Inspection and Time Change
- TCTO
- Equipment Transfer and Rehome Procedures
- Maintenance Personnel
- Training Management
- Maintenance/Supply Interface
- Automated Debriefing
- Automated Aircraft Forms
- Deficiency Reporting (DR)
- Production Control
- Automated Scheduling Module
- Aircraft Configuration Management
- Egress Configuration Management

2-3.4   Concept: CAMS performs three general functions: updates of the database, retrieval of information from the database for local use, and reporting of data required by higher HQs.

2-3.4.1   The database maintenance functions provides the capabilities to enter new data, change existing data, and delete erroneous and obsolete data from the database. Extensive editing of input transactions is accomplished programmatically to ensure that only correct data is entered into the database.

2-3.4.2   The information function provides for two types of retrieval. These are: the processing of small volume retrievals on-line and the preparation of reports and listings by background batch programs which process independently of the on-line system.

2-3.4.2.1   On-line retrievals are processed at the time the transaction is input. The output is returned to the requesting remote terminal.

2-3.4.2.2   Background products are processed under the control of the UNISYS 2200 executive system. System saturation and amount of data to be extracted controls how quickly the products are processed. Background products are output on the high-speed printer at the Data Processing Center (DPC) or on the unit's remote line printer.

2-3.4.3   Reports required by higher HQs are produced as a by-product of normal base-level operation of CAMS. These reports are output from the system at the specified time as a result of processing other specific transactions.

2-3.5   Intended Uses of Data: CAMS is a large, dynamic, on-line system used at base-level to manage maintenance equipment and personnel resources. It also provides the maintenance data needed by major commands, AFMC, HQ USAF, and other agencies to manage and track maintenance resources worldwide. CAMS provides the capability for maintenance personnel to communicate to a central, regional computer via remote terminals in selected maintenance work areas to provide the following capabilities:

2-3.5.1   Track engines and their components, automates the engine manager's D042 reporting, and establishes and maintains the installed-on relationship between the engine and components.

2-3.5.2   Reporting inventory gains and/or losses, Line Replaceable Unit (LRU) production time, and to have test equipment in the multiple status' open with an automatic calculation of capability.

2-3.5.3   Report C-E equipment and mission gains and losses, maintain and report multiple status conditions against C-E equipment and missions, and record delays encountered in returning equipment and missions to operational status.

2-3.5.4   Track maintenance actions and has both maintenance and supply data.

2-3.5.5   Automates the location of aircraft, missiles, aerospace ground equipment.

2-3.5.6   On-line capability for maintenance personnel to document their maintenance actions.

2-3.5.7   Allows changes to aircraft status or inventory gains and losses.

2-3.5.8   Provides an Estimated Time In Commission (ETIC) monitor

2-3.5.9   Provides operational events, mission recording, and mission accomplishment.

2-3.5.10   Automated the inspection and time-change processes, forecasts TCTO and time-change requirements, and provides current operating time on an item of equipment.

2-3.5.11   Automated the transfer of personnel and equipment to other CAMS units.

2-3.5.12   Maintains TCTO data pertaining to aircraft, engines, missiles, aerospace ground equipment, and C-E equipment owned by an organization. Monitors and controls TCTO progression.

2-3.5.13   Automates the capability to monitor manpower resources and forecasts and schedules personnel training requirements.

2-3.5.14   Verifies actual and approved configurations.

2-3.5.15   Automates parts ordering for unscheduled requirements, time-change requirements, TCTOs, maintains maintenance event validation of supply requisition, and automated the process for tracking parts through the repair cycle.

2-3.5.16   Automates the debriefing process, generates flying and maintenance schedule on a monthly, weekly, or daily basis and updates and monitors the approved and actual configuration of an aircraft.

2-3.5.17   Automates the deficiency reporting process.

2-3.6   Accuracy of Data: Use of a networked database enhances the on-line processing of the data by permitting data which has been recorded one time to be accessed and used by multiple subsystems. This reduces the amount of data the user would otherwise be required to maintain in the system. Furthermore, since commonly used data occurs only one time in the database, the accuracy is improved. Also, work-center and shift supervisors are responsible for reviewing on a daily basis the data entered into CAMS by personnel under their control. This is to ensure accuracy and completeness of data entered into CAMS.

2-4   IMPROVED MAINTENANCE MANAGEMENT PROGRAM (IMMP).

2-4.1   Purpose: IMMP was developed to support maintenance team tracking and data collection in support of ICBM maintenance. It is a unique system used by ICBM maintenance units designed to track missile maintenance team efforts by use of customized software and databases. ICBM maintenance documentation differs tremendously from other types of maintenance documentation, mainly due to ICBM's unique automated maintenance management system; tracks maintenance efforts, and directly upchannels data to the supporting SPO.

2-4.2   Objectives: The objective of IMMP is to support ICBM system maintenance to include maintenance scheduling, equipment resource management, maintenance team tracking, and ICBM historical data.

2-4.3   Scope: IMMP is a network-based system consisting of Network Servers and Work Stations. Network Servers consists of Database Servers and General Purpose File Servers. Duplicate mirrored system are provide to satisfy fault-tolerance requirements.

2-4.4   Intended Uses of Data:

• Monitor missile status in near real-time.

• Provide maintenance management and coordination.

- Configuration control.

- Fault diagnosis.

- Depot maintenance management.

- Assessment.

- Problem analysis.

- Trend detection and analysis.

- Logistics.

2-5 PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL) AUTOMATED MANAGEMENT SYSTEM (PAMS) (Q011).

2-5.1   Purpose: PAMS is the standard system used in Air Force PMELs to process Test Measurement and Diagnostic Equipment (TMDE) throughout a PMEL. PAMS is designed to provide PMELs the capability to automatically input and retrieve data by scanning a bar code label or keyboard entry. PAMS provides PMEL schedulers and managers workload and inventory analysis using on-line, real-time information.

2-5.2   Objectives: The following are general objectives of PAMS:

2-5.2.1   Include CAMS interface capability.

2-5.2.2   Implement LOGMARS technology (bar-coding).

2-5.2.3   Provide PMELs with database management software to access and manipulate an integrated database system.

2-5.2.4   Provide administrative software packages such as a spreadsheet and word processor that can access PMEL databases. These software tools will enable PMEL people to interact with PAMS database to meet an infinite variety of data analysis and reporting requirements.

2-5.2.5   Provide user interface that's desired for PMEL operations. Enable the PMEL to provide its customers with accurate and timely status and TMDE calibration schedules.

2-5.2.6   Provide automatic file transfer capability. This will permit integration with other automated maintenance management information systems as they evolve. These systems include but are not limited to CAMS, and REMIS.

2-5.2.7   Provide access to 33K-1-100-2 (TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide).

2-5.3   Scope: PAMS is an event oriented system. In most cases, data is entered to update PAMS as a result of TMDE scheduling or maintenance transactions. Retrieval of information from the database is determined by the needs of the functional user. This operating concept is implemented through on-line processing of networked databases. On-line processing capability is provided by access to PAMS via remote workstations located in different work areas. The user may enter data or retrieve information as needed. As a result, the database is maintained in a current state and reflects real-time information. Local PMEL managers can control their resources through the use of the following PAMS applications:

PAMS Scheduling

PAMS Technician

PAMS Total Quality

PAMS Management

PAMS Listings

2-5.4   Concept: PAMS performs four general functions:

- TMDE inventory management

- TMDE maintenance history information management

- Transmission of Job Data Documentation for higher headquarters analysis

- Report generation

2-5.5   Intended Uses of Data: PAMS is a system used at base-level to manage TMDE, personnel, and workload. It also provides the data needed by major commands and AF METCAL Det 1 to manage TMDE worldwide.

2-5.6   Accuracy of Data: Use of a networked database enhances the on-line processing by permitting information which has been recorded one time to be accessed and used by multiple applications. This reduces the amount of data the user would otherwise be required to maintain in the system, increasing accuracy. Bar-coding labels on TMDE ensures that the correct data for that item is selected from the database when the bar code is read by the PAMS computer. Database integrity is ensured by program-matic verification with technical order requirements and calibration measurement summaries.

2-6   CORE AUTOMATED MAINTENANCE SYSTEM FOR AIRLIFT (G081).

2-6.1   Purpose: G081 provides both a maintenance management system and a logistics command and control system for the C-5, C-9, C-130, C-141, KC-10, KC-135 and C-17 fleets. This system operates on a central database located at Tinker AFB utilizing an Amdahl mainframe. It provides fleet-wide visibility of status and location of aircraft, discrepancy history, TCTO status, MDD history, personnel, back shop production control, training, S-E, and AGE. All C-5, KC-10, C-141, KC-135 and C-17 home stations (including the Guard and Reserve) have access to the system. Outside CONUS main enroute locations have access and make updates to the system as well.

2-6.2   Objectives: The system provides base maintenance managers the ability to track each aircraft and determine what maintenance is required to get the aircraft available for generation. HQ AMC weapon system managers and analysis personnel get fleet wide information for overall management of the weapon system and can also determine historical trends. The system provides HQ AMC/TACC logistics command and control with the ability to determine where aircraft are located and their status as an aid to decision making process. The system is continuously modified to meet their requirements. An example: C141 aircraft have weight and pressurization restrictions and the system has been modified to display these restriction by aircraft or by total number of aircraft associated with a base. Currently there are system interfaces with REMIS (AFI 21-103 and MDD data), CEMS Increments I - III (AF engine management system), CEMS IV (C-17 engine trending system), and the Global Decision Support System (GDSS), which is the operations command and control system for AMC.

2-7   CEMS (D042).

2-7.1   Purpose: CEMS is the data system that has been identified by Congress as the USAF standard data system for the tracking of Air Force Engine Status, Accountability, and Critical parts life tracking. CEMS provides on-line real-time data accessibility to all levels of management. CEMS supports the engine accountability requirements and Congressional Financial reporting requirements as stated in AFI 21-104 and Critical parts life tracking requirements of the 00-25-5-1-x series of T.O.s. CEMS reporting requirements are stated in T.O. 00-25-254-1. CEMS supports the On-Condition Maintenance (OCM) and Reliability Centered maintenance (RCM) concepts for engines.

2-7.2   Objectives:

2-7.2.1   Enhance the readiness and sustainability of USAF weapon systems by providing all levels of management accurate real-time essential weapon system engine maintenance information.

2-7.2.2   Develop CEMS as the centralized propulsion system management information system.

2-7.2.3   Design CEMS as the primary AF database for collecting and processing of weapon system engine status, accountability, TCTO and Critical parts life tracking.

2-7.2.4   Structure CEMS by propulsion system (e.g., engines) using distributive processing techniques with additional Client server capabilities.

2-7.3   Scope: CEMS is structured into seven major sub-systems, DO42A-G with the additional capability of ORACLE based client server access. AF organizations report data to the system on-line interactive mode via terminal or through thge IBEMs program that requires only a single input for the updating of both CEMS and CAMS. User may query the CEMS databases, download data, and perform other functions within the security and/or access limits established by their approved user Identifications (IDs). This

is accomplished through the use of a menu-driven on-line (IMS) and Time Sharing Options (TSO) programs.

2-7.4   Concept: The following identifies the seven sub-systems that are fully integrated to make up CEMS.

2-7.4.1   DO42A – Status Reporting

2-7.4.2   DO42B – Inventory/Financial Management

2-7.4.3   DO42C – Allocation and Distribution

2-7.4.4   DO42D – Pipeline Analysis

2-7.4.5   DO42E – Configuration Management

2-7.4.6   DO42F – Time Compliance Technical Order (TCTO) Management

2-7.4.7   DO42G – Actuarial Experience Computation

2-7.5   Accuracy of Data: CEMS data will be validated during the reporting action based on coded edits and tables. These edits and tables are maintained by the requirements generated by the propulsion management community and approved by the CEMS Configuration Control Board (CCB) that is chaired by OC-ALC/TILC and staffed by the Major Command Engine Managers and Propulsion Management Divisions located at the ALCs.

CHAPTER 3

MAINTENANCE DATA DOCUMENTATION PROCESS

3-1 DOCUMENTATION CONCEPT.

To have valid and reliable maintenance data, both the users and the providers of data must have a clear understanding of the concept for documenting maintenance data. This concept is addressed below by describing its four major characteristics: documentation categories, data entry, data codes, and documentation rules.

3-1.1 Documentation Categories:

3-1.1.1 All MDD data is grouped into one of two categories. Data documented to describe maintenance performed on end items of equipment are categorized as "on-equipment." Generally, data documented to describe maintenance performed on assemblies, subassemblies, or components removed from an end item of equipment are categorized as "off-equipment." By documenting within the appropriate categories, both on-base and off-base users will have available data which fully describes where, when, what, and how maintenance production resources are used.

3-1.1.2 Job discovery and entry into the database is accomplished, in general, by one of four modes of operation. A discrepancy may be found during scheduled maintenance event. Unscheduled events may be discovered and input as individual maintenance discrepancies as they occur; or may be the result of a debriefing and be associated with specific aircraft flight with a manual debriefing. The final mode is the result of discovery by an on-board recording device and would be input electronically.

3-1.2 Data Entry: All four modes of data entry are accomplished at the base level. At depot level, data may be entered directly to REMIS. The MDD process uses standard codes to minimize the computer space required to store the data, streamline data entry, and allow computer processing in the analysis of the data. These codes are in the manual, and tables used in CAMS/REMIS/G081.

3-1.3 Documentation Rules: Support of this documentation concept requires rules to insure that documentation is accomplished consistently. These rules specify the format to use for each category of documentation, and when to use which codes. The rules for documenting data are written in paragraph 3-2.

3-2 RULES FOR DOCUMENTATION.

The rules for documenting data for the MDD system are written in a tabular form called a Decision Logic Table (DLT). Table 3-2, Convenience of Making Repair, is used as an example and is read in the following manner:

3-2.1 The first decision to be made is found in column A. Is the item being worked upon "on" or "off" equipment? This narrows the decision field to either rules 1 through 5 (on-equipment) or to rules 6 and 7 (off-equipment).

3-2.2 To further narrow the decision field, column B is used. Select the rule(s) that best indicate the action taken. Example, action taken on an on-equipment task is "F"; repair narrows the decision field to rules 1, 2, or 4.

3-2.3 Further, if the item is a recoverable item, only rules 1 and 2 now apply.

3-2.4 If the workcenter making the repair removes the reparable item and does not reinstall the reparable before leaving the end item, then rule 2 applies.

3-2.5 Maintenance actions that are entered into the 781K and do not require a symbol, but are entered as a note, do not require MDD as outlined in TO 00-20-5.

3-2.6 In Table 3-2, Convenience of Making Repair essentially the term "convenience of making repair" provides the workcenter (workcenter in this context refers to personnel performing the maintenance) an opportunity to decide where the reparable item will be repaired. Before the decision is made as to repair location, these conditions must be met:

- The item is a reparable item.

- No demand for the item is placed on supply.

- The reparable item can be returned to service.

With these conditions established, the repair will then be documented as "on-equipment" or "off-equipment." Once the documentation (on or off-equipment) is completed the rules in table 3-2 will be used.

3-3   "TROUBLESHOOTING" AND "REMOVAL TO FACILITATE OTHER MAINTENANCE."

The term "troubleshooting" denotes the action of determining the defective component(s) which require(s) repair and/or replacement. The term removal to facilitate other maintenance" denotes the action of removing serviceable assemblies, subassemblies, or components to gain access to the desired system and/or components. When either is actually accomplished, the action will be documented as on-equipment.

3-3.1   If the action taken for convenience of repair is not completed and the removed reparable item is not reinstalled before leaving the equipment end item, an AFTO Form 350, Reparable Item Processing Tag, with blocks 1, 2, and 14 documented, will be attached to the removed item. It is not the intent to have tags placed on items to be reinstalled if the items are kept with the end system, and the serviceability is not in question.

3-3.2   In the case of phase inspections or similar maintenance actions where large numbers of items are removed to facilitate other maintenance, such as all access panels on an aircraft, it may not be practical to attach AFTO Form 350 to every item. In this case, one AFTO Form 350 may be used, provided that the items identified by the AFTO Form 350 are kept together.

3-3.3   Alternate local procedures may be used in place of the AFTO Form 350 provided the procedure ensures serviceability and identification integrity of removed items to the end item.

3-4   VALIDITY AND RELIABILITY OF DATA.

The performing workcenter supervisor is responsible for ensuring the validity of the data submitted. This means that the supervisor must ensure that the data describes what actually took place and the entries are documented according to the rules outlined in this TO.

3-5   MAINTENANCE ACTIONS NOT REQUIRING MDD REPORTING.

Support procedures and manpower validation requirements for certain categories of work or equipment are not contingent on information from the MDD process. Maintenance reporting requirements pertaining to organizations, equipment, or categories of work for which written exemptions have been approved by HQ USAF/ILMM will be listed in this TO. Approved exemptions for equipment which has an SRD assigned will be listed in the REMIS SRD table. Requests for MDD exemptions will be submitted by letter to the requester's major command. The exemption request should include as a minimum, justification for the exemption, the SRD of the equipment; or if the request is for an organizational exemption; the major end items of equipment that the organization reports MDD against. Chapters 1 and 2 of this TO will help you understand the many uses and other data systems that utilize MDD data, and the factors weighed by the reviewing authorities listed in the next paragraph.

3-5.1   When the major command receives an exemption request, and if they agree with it, they will submit a letter stating their position to the managing SPM with information copies to HQ AFMC/LGS and ENB. These three organizations will evaluate the exemption request and forward their recommendations to HQ AFMC/ENBA for consolidation and evaluation. ENBA will then forward their recommendation to HQ USAF/ILMM for final approval prior to publication in this TO or amending the REMIS SRD table. Maintenance associated with the following conditions or equipment will not be input to the MDD process with the exception of TCTO. Approved organizational MDD exemptions are listed in paragraph 3-6.

3-5.2   Weapon or support system maintenance actions occurring within six months prior to phasing the system out of the active inventory. This exemption only applies to systems which are programmed and funded for replacement and/or have a definite replacement or deactivation time schedule. This excludes any equipment being transferred to another organization, service or country, or which will be retained and/or stored as a serviceable and/or reparable substitute or spare asset. Organizations that want to make use of this type of exemption must follow the request procedures in paragraph 3-5.

3-5.3   Nuclear Weapons: This includes all activity in a nuclear munitions work center (i.e., Reentry Vehicle and/or Reentry System (RV/RS) shop, Maintenance and Inspection (M&I), Assembly Surveillance and Inspection (AS&I), or Integrated Maintenance Facility (IMP)). Documentation guidance provided herein (i.e., start and/or stop time entries) will still apply. TCTOs on Nuclear Ordnance Commodity Management (NOCM) items listed in 11N series WUC manuals will be reported as required.

3-5.4   Explosive ordnance disposal team actions including reconnaissance, identification, rendering safe and subsequent disposal of hazardous explosive materiel.

3-5.5   Administrative telephone plant maintenance with the exception of the Preventive Maintenance Inspection (PMI) master listing for scheduling and documenting the performance of PMIs.

3-5.6   MDD requirements with the exception of TCTO documentation have been exempted for Defense Satellite Communications System (DSCS) earth terminals and their associated subsystems.

3-6   EXEMPTED ORGANIZATIONS AND EQUIPMENT.

This paragraph provides a list of organizations that are exempt from certain procedures outlined in this TO. These exemptions identify specific organizations and the exemptions granted. Deviations to the MDD process procedures beyond those outlined in this TO are not authorized. In all cases below, all TCTO compliances will be documented. The following exemptions are granted to the indicated organizations.

3-6.1   645th Communications Group and 1956 Communications Group Digital Subscriber Terminal Equipment (DSTE) Centralized Repair Activities (CRAB) exempt from reporting MDD on the AN/FYA-71 (JFJ) except for TCTO accomplishment and reparable processing.

3-6.2   Audiovisual Activities: All audiovisual equipment is exempt from reporting into the MDD process. This includes the previously exempted AMC Aerospace Audio Visual Service (AAVS) activities.

3-6.3   ACC - 1st Electronic Combat Range: Authorized to discontinue MDD reporting on equipment represented by the following SRDs: EEB, EE3, EVA, GAF, GDM, GDP, GDR, GHZ, GV1, GV2, and GV3. Documentation TCTOs and reparable processing will continue.

3-6.4   AFSPC: All ICBM units which are using the Configuration Failure, and Repair (CFAR) documentation process are exempt from using AFTO Form 349.

3-7   INPUT OF MDD DIRECTLY TO REMIS BY DEPOT, CONTRACTORS, AND SPECIAL ACTIVITIES.

3-7.1   Where system-to-system interfaces are not available, each repair center will input all reportable depot MDD to REMIS via desk top computers or a LAN system. Contractors may also input data directly to REMIS. It is the responsibility of the repair centers to ensure all MDD data (depot and contractor) is collected except where exempted by the prime management contracting agency or the SM.

3-7.2   SMs or the prime contracting agency having reportable contractor maintenance that do not elect to have MDD input direct to REMIS, will make arrangements to have the manually prepared data from those contractors input to REMIS. The SM or the prime contracting agency is responsible for ensuring the data meets the system edit criteria.

3-7.3   See the REMIS Users Manual for specific information for entering data direct to REMIS.

3-7.4   MDD may be input by the contractor to REMIS by direct screen or electronic media as specified in the contract.

3-7.5   When specified by the contract, contractors may manually prepare data using the applicable format listed in the Data Item Description. Data may be typewritten or legibly hand-scribed; however, illegible, inaccurate, or incomplete data will be returned to the contractor for correction.

ON-EQUIPMENT

MDD SYSTEM

1. Data source for documenting on-equipment AFTO Form 349.

NON-MDD SYSTEM

1. Tag reparable items.

2. Process a "No Demand Transaction" recoverable (reference TO 00-20-3).

3. Identify the discrepancy of the reparable item.

4. Source document used by standard base supply system to determine demand levels.

OFF-EQUIPMENT

MDD SYSTEM

1. Data source for documenting off-equipment AFTO Form 349.

NON-MDD SYSTEM

1. Identify location of repairables during repair cycle.

2. Identify status of reparable through the repair cycle.

3. Source document used by standard base supply system to determine demand levels.

4. Source document for identifying Not Reparable This Station (NRTS) actions to off-base repair facilities.

5. Tag reparable subassemblies or components removed from reparable assemblies.

NOTE

To determine when to use the AFTO Form 350 or applicable DO Form 1574 or 1577 series tags, refer to table 3-3.

ON-EQUIPMENT

MDD SYSTEM

1. Documenting maintenance actions on equipment and items such as:
  a.   Adjustments
  b.   Cannibalization
  c.   Corrosion treatment
  d.   Delayed Discrepancy Repair
  e.   Inspection
  f.   Removal of components
  g.   Remove to facilitate other maintenance
  h.   Replacement of components
  i.   Special inspection

  j.   Support general
  k.   TCTOs
  l.   Time-change items
  m.   Troubleshooting

NON-MDD SYSTEM

1. Dispatching specialists

2. Identifying:
  a. Number of Specialists dispatched
  b. Shop dispatching
  c. Reason for dispatch Action
  d. Where dispatched
  e. Length of dispatch
  f. Delayed discrepancies

3. Determining when to schedule maintenance, e.g., inspections, delayed discrepancies, TCTOs, etc.

4. Historical records

5. Reimbursable

OFF-EQUIPMENT

MDD SYSTEM

1. Documenting maintenance actions on assemblies, subassemblies, or components such as:
  a. Adjustment
  b. Assemble
  c. Bench checks
  d. Corrosion
  e. Fabrication
  f. Manufacturing
  g. Scheduling, calibration, and repair of TO 33K-1-100 items

  h. Special inspection
  i. Support general
  j. TCTO

NON-MDD SYSTEM

1. Dispatching specialists

2. Identifying:
  a. Number of specialists dispatched
  b. Shop dispatching
  c. Reason for dispatch
  d. Where dispatched
  e. Length of dispatch
3. Determining when to schedule maintenance, e.g., inspections, delayed discrepancies, TCTOs, etc.

4. Historical records
5. Reimbursable Billing

Table 3-1.   Determining Which References To Use

LINE	A TO DETERMINE	B REFER TO
1	Which items to document on a maintenance record for on-equipment documentation.	Tables 3-4 and 3-5
2	Which items to document on a maintenance record for off-equipment documentation.	Tables 3-6 and 3-7
3	Uses of the maintenance records.	Tables 3-3 and 3-4
4	Uses of the AFTO Form 350.	Figure 3-2 and Table 3-3
5	Rules for convenience of making repair.	Paragraph 3-2 and Table 3-2
6	The multiple line entries for a maintenance record for on and off-equipment.	Table 3-8
7	Data codes and elements to enter on the AFTO Form maintenance records.	Chapter 4
8	Documentation rules for Electronic Counter-measures (ECM) pods.	Paragraph 7-6.2
9	Documentation rules for TCTOs.	Paragraph 9-1.12.3.2 and Table 3-10
10	Information on the terms "troubleshooting" and "removal to facilitate other maintenance."	Paragraph 3-3
11	Documentation rules for depot-level maintenance performed by the ALC, Technology Repair Center (TRC) or their contractors.	Chapter 4

Table 3-2. Convenience of Making Repair

	A	B	C	D	E
RULE	If the convenience of repair is documented as	and the action taken	and the removed reparable is	and the workcenter that repairs the reparable item	then personnel will
1	On-equipment	is documented as F	a recoverable item	installs the same reparable item (now serviceable) and does not leave the equipment end item until the repair is complete.	insure that an AFTO Form 350, part II, is documented and processed as a no demand transaction through production control to supply. (TO 00-20-3 for no demand transaction.)
2	On-equipment	is documented as F	a recoverable item	does not install the item (now serviceable) before leaving the equipment end item	document an AFTO Form 350 and attach part I to the reparable item (now serviceable) and insure that an AFTO Form 350, part II, is documented and processed as a no demand transaction through production control to supply. (TO 00-20-3 for no demand transaction.)
3	On-equipment	for repair is not completed	a recoverable item	does not install the item before leaving the equipment end item	document an AFTO Form 350 and attach the form to the reparable item
4	On-equipment	is documented as F	a non-recoverable	installs and/or repairs reparable item (now serviceable) and does not leave the equipment end item until the repair is complete	not attach an AFTO Form 350

Table 3-2.   Convenience of Making Repair - Continued

	A	B	C	D	E
RULE	If the convenience of repair is documented as	and the action taken	and the removed reparable is	and the workcenter that repairs the reparable item	then personnel will
5	On-equipment	for repair is not completed	a non-recoverable	does no install the item (now serviceable) before leaving the equipment end item	document an AFTO Form 350 and attach the form to the reparable item
6	Off-equipment	is documented as A, F, G, K, L, V, or Z	a recoverable item with a documented AFTO Form 350 attached	installs the same item (now serviceable)	
7	Off-equipment	is documented as A, F, G, K, L, V, or Z	a non-recoverable item with a documented AFTO Form 350 attached	installs the same item (now serviceable)	

Table 3-3.   Selection of Which AFTO Form to Use at the Home Station for the MDD System

	A	B	C	D
RULE	**If the productive direct work hours are**	**and the work is**	**and the work center**	**then use**
1	used to perform on- or off-equipment work that does not require the removal or replacement of a reparable item	does <u>not</u> include the accomplishment of delayed discrepancies, overdue inspections, overdue TCTOs, and	subject to automated systems	appropriate user's manual
2	used to perform on- or off-equipment work that does require the removal or replacement of a reparable item	does <u>not</u> include the accomplishment of delayed discrepancies, overdue inspections, overdue TCTOs, and	subject to automated systems	AFTO Form 350
3	used to perform on- or off-equipment work that does not require the removal or replacement of a reparable item	(does include) the accomplishment of delayed discrepancies,	subject to automated systems	AFTO Form 350
4	used to perform on- or off-equipment work that does require the removal or replacement of a reparable item	(does include) the accomplishment of delayed discrepancies,	subject to automated systems	AFTO Form 350
5	used to perform on- or off-equipment work that does not require the removal or replacement of a reparable item	(does include) the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Form 349
6	used to perform on- or off-equipment work that does require the removal or replacement of a reparable item	(does include) the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Forms 349 and 350
7	to perform on- or off-equipment work that does not require the removal or replacement of a reparable item	does not include the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Form 349
8	used to perform on- or off-equipment work that does require the removal or replacement of a reparable item	does not include the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Forms 349 and 350

Table 3-4.   Maintenance Items to Document for On-Equipment Data***

	A	B	C	D
RULE	If the equipment end item is	and an ID number	and the productive direct work does	then personnel will document items
1	at its home base	is not as-signed	NOT required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 26, and 27
2	at its home base	is assigned	required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 6, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28**
3	not at its home base	is assigned	NOT required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
4	not at its home base	is assigned	required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28**
5	not at its home base	is not as-signed	NOT required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
6	not at its home base	is not as-signed	required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28**
7	at its home base	is not as-signed	required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, 27, and 28
8	at its home base	is not as-signed	NOT required the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
9	at its home base	is assigned	requires an engine change*	1, 2, 3, 6, 10, 11, 12, 13, 22, 26, 27, and 28
10	not at the home base	is assigned	requires an engine change*	1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 26, 27, and 28
11	not at the home base	is assigned	is performed on an installed gas turbine or re-ciprocating engine and NO time-change item or serially-controlled item is removed and re-placed	1, 2, 3, 4, 5, 26, and 27
12	not at the home base	is assigned	is performed on an installed gas turbine or re-ciprocating engine and a time-change item or serially-controlled item is removed and re-placed	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28

	A	B	C	D
RULE	If the equipment end item is	and an ID number	and the productive direct work does	then personnel will document items
13	not at the home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and NO time-change item is removed and replaced	1, 2, 3, 4, 5, 26, and 27
14	not at the home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and a time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28
15	at its home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and NO time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 26, and 27
16	at its home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and a time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28
17	at its home base	is not assigned	is support general	1, 2, 3, 4, and 5
18	at its home base	is assigned	is support general	1, 2, and 3
19	not at its home base	is assigned	is support general	1, 2, 3, 4, and 5
20	not at its home base	is not assigned	is support general	1, 2, 3, 4, and 5
21	at its home base	is not assigned	is support general	1, 2, 3, 4, and 5

*   When documenting an engine change, an ID number will always be used.
**   For wheels and tires, blocks 25 and 28 do not require entries.
*** For documenting block 29, refer to the appropriate chapter of this TO.

Table 3-5.   Maintenance Items Documentation of On-Equipment Data*

RULE	A If the equipment end item is	B and the productive direct work is	C then personnel will document
1	at its home base and has an ID number assigned	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, and N
2	at its home base and has an ID number assigned	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, and N
3	at its home base and has no ID numbers assigned	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, L, and N
4	at its home base and has no ID numbers assigned	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, L, and N
5	not at home station	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, L, and N
6	not at home station	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, L, and N
7	transient or deployed and has no ID number assigned	support general	A, C, G, H, I, J, K, L, and N
8	at its home base and has an ID number assigned	support general	A, C, G, H, I, J, K, and N
9	at its home base and has no ID numbers assigned	support general	A, C, G, H, I, J, K, L, and N

*   For documenting column M, refer to the appropriate chapter of this TO.
**   Note engine work must be identified by an ID number.
*** For optional use of column L refer to the appropriate chapter of this TO.

Table 3-6.   Maintenance Items Documentation for Off-Equipment Data***

	A	B	C	D
RULE	If the assembly, subassembly, or component	and the item	and the AFTO Form 350	then personnel will document
1	is a reparable item	is not a serially-controlled or a time-change item	is attached and block 2 contains an ID number	1,2, 3, 19, 20, 21*, 26, and 27
2	is a reparable item	is not a serially-controlled or a time-change item	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, and 27
3	is a reparable item	is not a serially-controlled or a time-change item	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, and 27
4	is a reparable item	is a serially-controlled assembly requiring removal and replacement of serially-controlled subassembly**	is attached and block 2 contains an ID number	1, 2, 3, 19, 20, 21*, 26, and 27
5	is a reparable item	is a serially-controlled assembly requiring removal and replacement of serially-controlled subassembly**	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, and 27
6	is a reparable item	is a serially-controlled assembly requiring removal and replacement of serially-controlled subassembly**	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, and 27
7	is a reparable item	is a time-change item	is attached and block 2 contains an ID number	1, 2, 3, 19, 20, 21*, 26, 27, and 28
8	is a reparable item	is a time-change item	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, 27, and 28
9	is a reparable item	is a time-change item	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, 27, and 28

*   Block 21 is used when a reparable item has an ETI.

**   A second AFTO Form 349 is required to document the removal and replacement of the serially-controlled item, blocks 1, 2, 5, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28. For depot repair shops, SRU subassemblies which are not configured to their higher assembly LRU, reuire serial numbers must be entered in the MDD record) when the SRU is removed and subsequently repaired. This process applies to designated WUCs established by the applicable weapon system manager.

*** For documenting block 29 refer to the appropriate chapter of this TO.

Table 3-7. Maintenance Items Documentation for Off-Equipment Data**

RULE	A If the AFTO Form 350 that is attached to the reparable item	B then personnel will document
1	Contains a command activity ID	A, C, D*, E*, F*, G, H, I, J, K, L***, and N
2	Does not contain a command activity ID	A, C, D*, E*, F*, G, H, I , J, K, and N

*   For support general work entries not required.
**   For documenting column M, refer to the appropriate chapter of this TO.
*** For optional use of column L, refer to the appropriate chapter of this TO.

Table 3-8.   Number of Action Lines to Use for Both On and Off-Equipment Documentation

RULE	A If the maintenance crew does	B and the work is started and completed	C then personnel will use
1	not stop for more than 15 minutes or change crew size	by the same category of labor from the same work center	one action line
2	stop for more than 15 minutes but does not change crew size	by the same category of labor from the same work center	more than one action line
3	not stop for more than 15 minutes and does change crew size	by the same category of labor from the same work center	more than one action line
4	stop for more than 15 minutes and does change crew size	by the same category of labor from the same work center	more than one action line
5	not stop for more than 15 minutes or change crew size	and the labor category from the same work-center changes before completion	more than one action line
6	stop for more than 15 minutes but does not change crew size	and the labor category from the same work-center changes before completion	more than one action line
7	not stop for more than 15 minutes and does change crew size	and the labor category from the same work-center changes before completion	more than one action line
8	stop for more than 15 minutes and does change crew size	and the labor category from the same work-center changes before completion	more than one action line
9	not stop for more than 15 minutes or change crew size	by different categories of labor from the same workcenter	more than one action line
10	stop for more than 15 minutes but does not change crew size	by different categories of labor from the same workcenter	more than one action line
11	not stop for more than 15 minutes and does change crew size	by different categories of labor from the same workcenter	more than one action line
12	stop for more than 15 minutes and does change crew size	by different categories of labor from the same workcenter	more than one action line

NOTE
This table is not applicable for depot MDD (see 4.1.3 NOTE).

Table 3-9. Maintenance Items Documentation for a tracked Item in the WUC Table

RULE	A If the man-hour expenditures	B and an ID number	C and the productive direct work	D then technicians will document
1	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 6*, 15, 19, 20, 21, 22, 28, and columns A through K, and N**
2	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal and concurrent replacement of an asterisk item (other than an engine)	items 1, 2, 3, 6*, 15, 19, 20, 21, 22, 23, 24, 25*, 28, and column A through K, and N**
3	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves installation of a replacement asterisk item (other than an engine) accomplished separately from the removal	items 1, 2, 3, 6, 15, 22 (see tag number used for the removal), 23, 24, 25*, 28, and columns A through K, and N**
4	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is an aerospace vehicle on end item of AGE	items 1, 2, 3, 6, 15, 23, 24, 25*, 28, and columns A through K, and N**
5	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is not an aerospace vehicle on end item of AGE	items 1, 2, 3, 15, 19, 20, 21, (19, 20, and 21 are used to identify the assembly the item is being installed in) 23, 24, 25*, 28, and columns A through K, and N**
6	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal of an engine and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 6*, 10, 11, 15, 22, 28, and columns A through K, and N**

RULE	A If the man-hour expenditures	B and an ID number	C and the productive direct work	D then technicians will document
7	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal and concurrent replacement of an engine	items 1, 2, 3, 6*, 10, 11, 12, 13, 15, 22, 28, and columns A through K, and N**
8	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves installation of an engine accomplished separately from the removal	items 1, 2, 3, 6, 12, 13, 15, 22, 28, and columns A through K, and N**
9	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is not assigned to the end item of equipment	involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 4, 5, 6*, 15, 19, 20, 21, 22, 28, and columns A through L, and N**
10	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is not assigned to the end item of equipment	involves removal and concurrent replacement of an asterisk item (other than an engine)	items 1, 2, 3, 4, 5, 6*, 15, 19, 20, 21, 22, 23, 24, 25*, 28, and columns A through L, and N**
11	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is not assigned to the end item of equipment	involves installation of a replacement asterisk item (other than an engine) accomplished separately from the removal	items 1, 2, 3, 4, 5, 6, 15, 22 (same tag number used for the removal), 23, 24, 25*, 28, and columns A through L, and N**
12	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is not assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is an aerospace vehicle on end item of AGE	items 1, 2, 3, 4, 5, 6, 15, 23, 24, 25*, 28, and columns A through L, and N**

Table 3-9. Maintenance Items Documentation for a tracked Item in the WUC Table - Continued

RULE	A If the man-hour expenditures	B and an ID number	C and the productive direct work	D then technicians will document
13	are documented against an air-craft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is not assigned to the end item of equipment	involves initial installation of an item and the next higher as-sembly is not an aerospace vehi-cle on end item of AGE	items 1, 2, 3, 4, 5, 15, 19, 20, 21 (19, 20, and 21 are used to iden-tify the assembly the item is be-ing installed in) 23, 24, 25*, 28 and columns A through L, and N**
14	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves removal of an engine and replacement is not accom-plished concurrently with the removal	items 1, 2, 3, 4, 5, 6, 10, 11, 15, 22, 28, and columns A through L, and N
15	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves removal and concur-rent replacement of an engine	items 1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 15, 22, 28, and columns A through L, and N
16	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves installation of an en-gine accomplished separately from the removal	items 1, 2, 3, 4, 5, 6, 12, 13, 15, 22, 23, 28, and columns A through L, and N

NOTE

An entry is required in column B when the WUC begins with 21, 22, 23, or 24, or when the component is a GCSAS-approved configuration item loaded with an egress indicator of "E" or "B".

*   Item entries not required for items for which time records are not maintained.

**   Units under major commands implementing directives will enter the AFSC (with an "X" in the skill level) in column N and the employee number of the senior crew member in block 15.

Table 3-10. Documentation for TCTOs

RULE	A **If the TCTO directs modification of the**	B **and an end item ID number**	C **and the productive direct work**	D **then technicians will document**
1	A weapon system or equipment end item	is assigned	does not involve serially-controlled item or an engine	items 1 through 3, 15, and 28; and columns A, C through K, and N**
2	A weapon system or equipment end item	is assigned	involves a serially-controlled item or an engine	items 1 through 3, 15, 19, 20, 21, and 28; and columns A, C through K, and N**
3	A weapon system or equipment end item	is assigned	involves an installed engine (2 or 35 category TCTOs) and no 1 category TCTO has been issued	items 1, 2, 3 (engine ID number), 15, 19, 20, 21, and 28; and columns A through K, and N**
4	A weapon system or equipment end item	is assigned	involves an installed engine and a TCTO in the 1 category has been issued in addition to the engine TCTO in the 2 or 35 category	two records. One for the 1 category with entries in items 1 through 3 (aircraft ID number) 15, and 28; and columns A through K, and N** with "O" in column J. The second one for the 2 or 35 category will have entries in items 1 through 3 (engine ID number) 15, 19, 20, 21, and 28; and columns A through K, and N**
5	A weapon system or equipment end item	is not assigned	does not involve a serially controlled item or an engine	items 1 through 5, 15, and 28; and columns A, C through L, and N**
6	A weapon system or equipment end item	is not assigned	involves a serially-controlled item or an engine	two records. The first will have entries in items 1-5, 15, 19-21, and 28; and columns A, C through L, and N**. The second will have entries in items1, 2, 5, 15, 19, 20, 21, and 28; and columns A through L, and N**, with the WUC of item in column C and with an "O" in column J.
7	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is assigned	involves a tracked item in the WUC table	two records. The first record is compliance against the end item. Items 1, 2, 3, 15, 28; and columns A, C-K, and N**. The second record is the removal and replacement action.* Items 1, 2, 15, 19-25, 28; and columns A, C through K, and N**. Column A entry must be a "T", column C must be the WUC of the item and column J must be an "O". Crew size is only entered on the first record.

Table 3-10.   Documentation for TCTOs - Continued

RULE	A If the TCTO directs modification of the	B and an end item ID number	C and the productive direct work	D then technicians will document
8	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is not assigned	involves a tracked item in the WUC table	two records. The first record is compliance against the end item. Items 1, 2, 3, 4, 5, 15, 28; and columns A, C-L, and N**. The second record is the removal and replacement action.* Items 1, 2, 3, 4, 5, 15, 19 through 25, 28; and columns A, C-L, and N**. Column A entry must be a "T", column C must be the WUC of the item, and column J must be "O". Crew size is only entered on the first record.
9	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is assigned	does not involve a tracked item	items 1, 2, 3, 15, 28; and columns A, C through K, and N**.

NOTE

- Actions on engines or engine components should contain a column "B", component position code when working on an installed engine.

- When TCTOs are accomplished by transient maintenance base, the original record will be placed in the 781 binder for home station use in updating historical files.

- In automated information systems, the two records may be combined into a single screen or spread over several screens

*   If the TCTO involves removal and replacement of more than one item dentified by a tracked in the WUC table, a separate record must be prepared for each removal and replacement action.

**   For TCTOs other than commodity category, units managed under major commands implementing directives will enter the AFSC (with an "X" in skill level) in column N and the employee number of the senior crew member in item 15. For commodity category TCTOs, enter AFSC (with an "X" in skill level) in column N if there is no entry in block 21. If there is an entry in item 21, leave column N blank.

Table 3-10.   Documentation for TCTOs - Continued

RULE	A	B	C	D
	If the TCTO directs modification of the	and an end item ID number	and the productive direct work	then technicians will document
10	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is not assigned	does not involve a tracked item	items 1, 2, 3, 4, 5, 15, 28; an columns A, C through L, and N**.

ITEM NUMBERS

1	Job Control Number
2	Work Center or CAGE Code for Contractors
3	ID Number or Serial Number
4	MDS/TMS/TMSM or Equipment Designator
5	SRD
6	Time
7	
8	
9	
10	Engine Time
11	Engine ID
12	Installed Engine Time
13	Installed Engine ID
14	
15	
16	
17	
18	
19	Federal Stock Class
20	Part Number
21	Serial Number or Lot Number
22	AFTO 350 Tag Number
23	Installed Part Number
24	Installed Serial Number or Lot Number
25	Installed Operating Time
26	Discrepancy
27	Correction Action

A	Type Maintenance Code
B	Component Position
C	Work Unit Code or Reference Designator
D	Action Taken Code
E	When Discovered Code
F	How Malfunction Code
G	Units Completed
H	Start Hour
I	Stop Day and Hour
J	Crew Size
K	Category of Labor
L	Command Activity ID
M	
N	Employee Number

For definitions and exceptions, see Chapter 4

MAINTENANCE DATA COLLECTION RECORD

OMB NO.
0704-0188

1. JOB CONTROL NO.	2. WORKCENTER	3. I.D. NO./SERIAL NO	4. MDS	5. SRD	6. TIME	7. PRI	8. SORTIE NO	9. LOCATION

10. ENG TIME	11. ENGINE I.D.	12. INST ENG TIME	13. INST ENG ID	14.	15.	16.	17. TIME SPC REQ	18. JOB STD

19. FSC	20. PART/LOT NO	21. SER. NO/OPER TIME	22. TAG NO.	23. INST. ITEM PART NO	24. SERIAL NUMBER	25. OPER TIME

ACT. LINE	A TYPE MAINT	B COMP POS	C WORK UNIT CODE	D ACTION TAKEN	E WHEN DISC	F HOW MAL	G UNITS	H START HOUR	I STOP DAY	I STOP HOUR	J CREW SIZE	K CAT LAB	L CMD ACT ID	M SCH CODE	N AFSC EMPLOYEE NUMBER
1															
2															
3															
4															
5															
6															
7															

26. DISCREPANCY

27. CORRECTIVE ACTION

28.

29. PARTS REPLACED DURING REPAIR (SUBASSEMBLIES REPAIRED/REPLACED)

LINE NO	A FSC	B PART NUMBER	C WORK UNIT CODE	E REF SYMBOL	F HOW MAL	G QTY

30. CONTINUATION FROM BLOCK

AFTO FORM 349, 19980201 *(EF-V2)*   PREVIOUS EDITION IS OBSOLETE.   H8801480

Figure 3-1.   AFTO Form 349, Maintenance Data Documentation Record

AFTO FORM 350
JAN 93

PREVIOUS EDITION
WILL BE USED

OMB NO. 0704-0188

REPARABLE ITEM PROCESSING TAG

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data source, gathering and maintaining the data needed, completing and reviewing the collection of information. Send comments regarding this burden estimate to any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 120, Arlington, VA 22202-4302, and the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington DC 20503. Please DO NOT RETURN your form/questionnaire to either of these addresses. Send your completed form/questionnaire to: Prime Weapon System/End Item ALC Material Utilization and Control Office (MUCO).

1. JOB CONTROL NO.		2. ID/SERIAL NO.	3. TM	3A. SRD	4. WHEN DISC
5. HOW MAL	6. MDS	7. WORK UNIT CODE		8. ITEM OPER TIME	9. QTY
10. FSC	11. PART/LOT NUMBER				
12. SERIAL NUMBER	13. SUPPLY DOCUMENT NUMBER				

14. DISCREPANCY

15. SHOP USE ONLY

15A. DMC/ACT ID	15B. SHOP ACTION TAKEN

TAG NO.   AFTO 350 PTJ

000170

16. SUPPLY DOCUMENT NUMBER

17. NOMENCLATURE

18. PART NUMBER	18A. WORK UNIT CODE

19. NSN

20. ACTION TAKEN	21. QTY	22. RPC USE ONLY

TAG NUMBER   AFTO 350 PTJ

000170

H8801484

Figure 3-2.   AFTO Form 350, Reparable Item Processing Tag

WARNING

Unauthorized persons re-
moving, defacing or destroy-
ing this tag (or label) may be
subject to a fine of not more

than $1,000 or imprison-
ment for not more than
one year or both.

(18 USC 1 36 1)

REPAIR CYCLE DATA

23. NSN	24. SRAN CODE
25. TRANSPORTATION CONTROL NUMBER	

STATUS CHANGES TO

26. SERVICEABLE

27. CONDEMNED

28. SUPPLY INSPECTOR'S STAMP

29. BASE REPAIR CYCLE DATA		YR	JULIAN DATE		TIME
DATE REMOVED	REC'D BY RPC				AWM
TO:					
TO:					AWP
TO:					
TO:					
TO:					
DATE COMPLETED					

H9000010

Figure 3-3.   AFTO Form 350, Reparable Item Processing Tag (Reverse)

CHAPTER 4

CODES AND ENTRIES USED IN THE MAINTENANCE
DATA DOCUMENTATION PROCESS

4-1 <u>USE OF CODES.</u>

The MDD process uses coded information to simplify data recording to provide the required procedures and information. The use of codes also facilitates data retrieval to produce reports and summarized data for use in maintenance and/or logistics management. Data elements and codes can be found in the REMIS tables, and this T.O. The REMIS tables take precedence over all other sources for MDD data elements and codes. Narrative information in MDD complements coded data. Care must be taken not to include classified data in the narratives, which will be contained in maintenance management information systems.

4-1.1 The peculiar rules for documenting the codes and entries described in this chapter are contained in chapter 7.

4-1.2 The policy for making recommended changes, additions, and deletions to these codes and/or data elements will be forwarded through command channels to HQ AFMC/ENB.

4-1.2.1 SRD related requests will be submitted as prescribed in AFI 23-106, Assignment and Use of SRDs.

4-1.2.2 Recommendations concerning JCN and workcenter codes will be forwarded through command channels to HQ AFMC/ENB.

4-1.2.3 Changes to WUCs will be submitted through command channels to the applicable SPM T.O. Office of Primary Responsibility (OPR) (technical content manager) on an AFTO Form 22, TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY, in accordance with T.O. 00-5-1. The TO OPR has final approval authority for WUCs below the system level (first two positions of the WUC) except for support general and engine WUCs. Recommended changes to all other data elements, support general- and system-level WUCs will be forwarded to HQ AFMC/ENB or the engine WUC managers for final approval. These requests must be accompanied by a complete evaluation from the SPM TO OPR. As a minimum, the evaluator's findings must include an approval and/or disapproval recommendation or position and all required editing that will be necessary in the event the proposal is approved.

4-1.3 All changes to the codes or procedures referenced in paragraph 4-1, except for WUCs below the system level, require the approval of HQ AFMC/ENB, and notification of the Integrated Weapon System Management (IWSM) program manager and the AF Data Dictionary OPR and the approval of HQ USAF/ILMM.

NOTE

This chapter covers both field and depot-level maintenance documentation. Exceptions pertaining to depot level are noted at the end of each paragraph. The term "depot level" refers to both organizational and contractor depot maintenance.

4-2 <u>JCN.</u>

The JCN is used to report, control, and identify each maintenance action. All maintenance jobs will be assigned a JCN. The responsibility for assignment and control of JCNs is outlined in major command implementing instructions.

4-2.1 Locally, this number provides a means to tie together all on and off equipment actions taken, the employees hours expended and the failed parts replaced in satisfying a maintenance requirement whether it be the correction of a discrepancy, completion of an inspection, a TCTO, or time change.

4-2.2   Each individual job will have a JCN assigned. Every action taken that is related to the job, regardless of workcenter, time or place will have the same JCN that was originally assigned to the job. Rules for assigning JCNs are contained in table 4-1. Use of these rules will permit control of all related actions, and provide the ability to tie information together in data systems for analysis purposes.

4-2.3   The base-level JCN consists of nine characters. The first five characters represent the ordinal day, such as 96041 for 10 February 1996. The last four characters are used to identify jobs, and normally consist of a daily or monthly job sequence number such as 0001 for the first job of the day or month. Using the cited examples, the JCN would be 960410001.

4-2.3.1   For hourly and calendar phased inspections, the sixth position of the JCN will be an alpha or numeric character assigned as shown in figure 4-1. When more than one phase inspection is accomplished concurrently, the JCN for the highest numbered phase will be assigned. The requirement for standard JCNs for each phase dictates unique construction and assignment of the sixth position of the JCN.

4-2.3.2   For periodic, hourly post-flight, minor and major isochronal inspections, home station checks, and ground C-E calendar inspections the sixth position will be assigned as shown in figure 4-1.

4-2.3.3   A block of sequence numbers for the seventh, eighth, and ninth positions of the JCN will he reserved and assigned to those discrepancies discovered during the "look" phase, an inspection which requires a separate JCN. Unique JCNs from the sequence will be assigned to record all major discrepancies which include those discrepancies discovered against work-unit-coded asterisk items, those discrepancies carried forward which were not corrected during the inspection, and those discrepancies which require ordering items from supply. All minor discrepancies discovered (e.g., safety wire, item loose) will be completed under the look phase inspection JCN. A JCN assigned for use in recording preflight, basic postflight, or other support general actions will not be used when documenting the correction of a discrepancy that has been previously assigned a JCN. Alpha characters in JCNs are also required for SE, AGE, and ATE.

4-2.4   Due to requirements for assuring unique JCNs AF wide under the procedures outlined for inspections, alpha characters will not be used in the sixth position of the JCN except as authorized in this TO. AMC is exempted from this requirement for the TF39 engine JCNs due to expanded Malfunction and Detection, Analysis Recording Subsystem (MADARS) and/or Ground Processing System (GPS) capability.

4-2.5   The primary purpose for assigning JCNs to discrepancies utilizing the first five positions of the inspection JCN plus consecutive sequence numbers is to make them easy to track and to simplify retrieval of inspection data at base level. The reserved block of sequence numbers should be adequate enough to ensure that discrepancies requiring unique JCNs can be assigned sequential numbers during an inspection. The primary reason for assigning a block of sequence numbers is to assure unique JCNs are available and assigned when the same numbered phase or like inspections are accomplished on two or more of the same end items within the maintenance complex on the same day. Although this is not a common occurrence, it does happen and could result in duplication of JCNs and thus destroy their uniqueness.

4-2.6   Blocks of JCNs may be assigned to equipment, organizations or certain recurring maintenance actions in accordance with the requirements in this TO and the procedures contained in AFI 21-101. The AF Form 861, Base/Transient Job Control Number Register, provides a method of controlling and recording JCN assignments. A CAMS screen provides for the documentation of base and/or transient maintenance actions. Either can be used as a record of assigned blocks of JCNs or of each individual JCN assignment. When the AF Form 861 is used, each JCN should be closed out by drawing a line through that entry, by entering a check mark, or some other visible means of identifying a JCN for which all work has been completed. A JCN may be terminated by the assigning unit when an item is shipped to another base or transferred to another unit and there is no indication that the item will be returned.

4-2.7   In most cases, the depot JCN can be obtained from block 1 of the AFTO Form 350 or the automated equivalent which accompanies the reparable item. If a valid JCN is not available from an AFTO Form 350, a locally constructed unique number must be used for each item processed. The JCN consists of nine digits. To pass error edits, the first two positions of the JCN must be the last two digits of the year, the second three positions (Julian day) must be numeric 001 through 366. The last four positions can be any alphanumeric combination excluding alpha "I" and "O." For example, 9 March 96, and the first job of the day or month would be written as 960680001. When it is necessary to construct a JCN the last four positions of the JCN may be the last four digits of the operation number or as directed by local operating instructions.

4-3   WORKCENTER CODE.

The workcenter code consists of five characters and is used to identify organizational elements to which maintenance personnel are assigned. Standard workcenter codes which are used by all organizations engaged in maintenance functions, and the responsibilities for assigning and coordinating workcenter codes are outlined in AFI 21-101 and major command implementing directives. Standard workcenter codes for all types of workcenters are covered in appendix A of this TO. Workcenters, except the non-reporting ones, may fall under two or more of the workcenters described below.

4-3.1   There are four types of workcenters referred to in the MDD process:

4-3.1.1   The owning workcenter has the basic custodial and maintenance responsibility for an item of equipment.

4-3.1.2   The performing workcenter is the one performing maintenance or contributes labor toward a maintenance requirement. This includes workcenters assigned responsibility for equipment calibration. When maintenance is performed by owning workcenter personnel on their own equipment, they represent both the owning and performing workcenters

4-3.1.3   A reporting workcenter is any workcenter to which maintenance personnel are assigned, although reporting may be exempted. The work center code entry will represent the workcenter code of the performing technician. When two or more individuals of the same workcenter participate, one entry is sufficient; however, if two or more workcenters participate, separate entries are required. When two or more individuals from the same workcenter, managed under the decentralized maintenance concept, participate in the same maintenance action, separate entries for each AFSC involved are required.

4-3.1.4   A non-reporting workcenter is where maintenance personnel may expend man-hours, but to which no maintenance personnel are assigned. Examples of non-reporting workcenters are those for maintenance contractors who provide maintenance data, or for training equipment which is not assigned to maintenance, but requires maintenance support. Units may establish a workcenter named "depot" for depot support teams.

4-3.2   Maintenance performed on transient USAF, Air Reserve, and ANG aircraft will be entered in the MDD system. Data required for off-base processing is provided by the station where the maintenance was performed. Maintenance and servicing performed on AMC industrial funded aircraft do not require the data transmission to the home station.

4-3.3   Entries for work accomplished by maintenance teams from outside the maintenance complex, such as depot or contractor field teams, will be processed through the workcenter where the work is performed, using the depot/contractor workcenter code. Teams are required to document all work accomplished at equipment operating sites. Team supervisors will be responsible for completeness and accuracy of data submitted by the team. The maintenance team's home station may pull production information from REMIS for the work performed to ensure second position in the workcenter code to preclude duplication of off-base reporting.

4-3.4   For organic depot workload, this block will always have the Resource Control Center (RCC) code entered. For contractors, use the code supplied by the contracting SPM, usually the Contractor and Government Entity (CAGE) code.

4-4   ID NUMBER.

The ID number consists of five characters, and is used to identify equipment on which work was performed or from which an item was removed. The first character of the ID number is normally the type equipment code, such as "A" for aircraft. The last four characters of the ID number are normally the same as the last four positions of the equipment serial number. To preclude duplicate ID numbers, the last four positions may be a modified number of a locally developed alphanumeric designator.

4-4.1   The ID number is a unique code, and its use must be understood in order to know how certain data elements are used for maintenance actions. For on-equipment work, this code is interpreted by a computer routine into the owning workcenter, the equipment serial number, registration number or part number, as applicable; the MDS, Type Model Series Modification (TMSM), TMS or end item WUC, and the SRD. For off-equipment work, this same ID number will convert to owning workcenter and SRD code. This feature minimizes errors in essential information since up to four data elements can be accurately input by recording a single five-character ID number.

4-4.2   There are three basic categories of ID numbers:

4-4.2.1   ID number assigned to specific end item equipment. This includes aircraft, missiles, engines, guns, pods, serialized SE (registered and non-registered), trainers, AGE, ATE, and ground C-E equipment.

4-4.2.2   ID number assigned to categories 2, 3, and 4 TMDE.

4-4.2.3   ID number assigned to like items of non-registered SE, such as maintenance stands, dollies, or miscellaneous equipment on which maintenance is performed, but detailed identification for failure analysis is not required.

4-4.2.3.1   Two different ID numbers will be assigned to certain end items as outlined in subparagraph 4-4.2.4 below. To further explain the requirements for assigning of ID numbers for SE, the following will be applied:

4-4.2.4   Individual ID numbers will be assigned to registered and/or powered SE, and non-registered SE which is selected by local (base) management for ID assignment by individual end item serial number.

4-4.2.5   Grouped ID numbers are assigned to SE which is not managed by registration or serial number, and SE items which do not require detailed MDD data for each individual item. Items of SE that are assigned an ID number under the grouped SE concept must have the same end item WUC and SRD for each ID number. For instance, all maintenance stands grouped under a single grouped SE ID number must have the same end item WUC and SRD.

4-4.2.6   Grouped ID numbers may also be assigned to selected operational equipment utilized by Air Education Training Command (AETC) technical training centers for training purposes, and for documenting preventive maintenance inspections on locally reported ground C-E like equipment end items. For equipment subject to on-equipment maintenance actions, such as teletype sets, the grouped SE procedures may be used in conjunction with the applicable SRD code assigned to the teletype set. (An ID number may also be assigned to items of training equipment located in one confined area to facilitate documentation of support general and minor on-equipment repair actions. WUC "ZYA00" or "ZY200"and SRD code "TRD" will be used as the end item identification when assigning the grouped ID number for assemblies used for training purposes). Repairs or TCTOs performed by AETC technical training center personnel on training equipment assemblies normally not subject to on-equipment maintenance (such as AN/ARC-34 sets) will be documented as off-equipment maintenance actions. However, minor repair actions, if performed at the training site, will be documented as on-equipment actions.

4-4.2.7   End items (generally SE and/or AGE, ATE) which have an item of TMDE installed as a component should have an ID number assigned (with first character B, G or H).

4-4.3   Some equipment does not lend itself to ID numbering procedures, and all categories of equipment should be studied to determine the applicability of ID number assignment. Equipment which may not require ID numbers are items that are frequently transferred from one owning workcenter to another; items which are infrequently subject to maintenance actions; low inventory items; items not assigned to maintenance organizations and items subject only to off-equipment maintenance actions. These items are in the category of equipment where ID assignment is not practical because it is just as much trouble to maintain ID numbers for them as it is to record maintenance by using the non-ID number reporting method outlined in this TO.

4-4.4   There is no requirement to assign ID numbers to transient aircraft and missile transporters because they are recorded under the transient equipment procedures. Others are shop support for base supply and conventional munitions, also, SE or C-E being repaired by a central repair facility, for other activities. Shop equipment, handtools, industrial equipment, some nondestructive inspection equipment, components, and items not MDD reportable will not have ID numbers assigned.

4-4.5   Work accomplished and recorded without an ID number precludes identification of the owning workcenter in the MDD process, however, it requires entry of a command code. Lack of an owning workcenter code should not cause any problems if the preceding instructions are followed. The owning workcenter identification would have little value for equipment that does not require ID numbers. The owning workcenter identification is obtained through the ID numbering master file interpretation procedure.

4-4.6   The equipment list will be purged of ID numbers that are no longer required. Each activity that has items with ID numbers assigned is responsible for providing information through their organization for

the documentation activity to maintain ID number assignments current and accurate (AFI 21-101 and/or major command implementing directives). Organizations which rotate equipment to other locations with the probability of some or all of this equipment being returned, may retain ID numbers. This procedure should be monitored to eliminate ID numbers when it becomes apparent that the items will not be returned.

4-4.7 The ID number is not used in depot maintenance.

4-5 MDS AND/OR TMS AND/OR TMSM.

When an ID is not utilized at base level, one has not been assigned, or for transit equipment, use the MDS, TMS, TMSM, or the equipment designator as found in the SRD table.

4-6 FEDERAL STOCK CLASS (FSC).

Enter the federal supply classification code of the item being modified or removed. The FSC is the first four digits of the NSN.

4-7 PART AND/OR LOT NUMBER.

Enter the part number of the item being modified or removed. Include all applicable characters used to make up the part number. For conventional munitions items within FSC 1300 such as propulsion units, igniters, warheads, fuses, squibs, or primers (item 20) will contain the lot number of the item.

4-8 SERIAL NUMBER OR OPERATING TIME.

Enter the serial number of the item being modified or removed if it is a serially-controlled item. If the serial number exceeds 10 characters, enter only the last 10 characters. Enter the current operating time of the time-change or serially-controlled item (Reliability Improvement Warranty (RIW) items included) being removed.

4-9 TAG NUMBER.

Enter the entire AFTO Form 350 tag number that is prepared and is to be attached to the removed item which was identified with a tracked indicator in the WUC table. If installation is accomplished separately from the removal action, a suspense AFTO Form 349 may be initiated.

4-10 INSTALLED ITEM PART NUMBER.

Enter the part number of the item being installed. For conventional munitions time-change items being installed, enter the lot number.

4-11 SERIAL NUMBER.

Enter the serial number of the item being installed. If the serial number exceeds 10 characters, enter only the last 10 characters.

4-12 OPERATING TIME.

Enter the previous operating time of the time-change or serially-controlled item (Reliability Improvement Warranty (RIW) items included) being installed. This entry will be the time since last overhaul to the nearest whole hour. For items containing Elapsed Time Indicators (ETIs) the entry will be the ETI reading to the nearest whole hour. For calendar items, the entry will be to the nearest whole month.

4-13 DISCREPANCY.

Provide a narrative description that completely describes the problem, including multiple Built in Test (BIT) fault codes. Provide as much detail as possible to aid in failure analysis and help speed repairs.

4-14 CORRECTIVE ACTION.

Provide detailed actions taken to correct the problem. As with discrepancy data, detail is important to analysts and engineers for failure analysis and product improvement.

4-14.1 The corrective action narrative will contain a "free text narrative describing the action taken to correct the discrepancy."

4-14.2   This narration will contain information closely matching the action taken code used, the work unit code nomenclature as loaded in CAMS and TOs (if not provided for in WCE narrative), the how malfunctioned code for nature of defect (not required if no change from WCE narrative) and units produced identified in the Detailed Data Record (DDR) line entry. Several examples of what is minimally acceptable to place in the corrective action block and the reasons why are listed below.

NOTE

The term "item" in parentheses below identifies the system/components being worked on.

4-14.2.1   Bench check in progress, work in progress, further maintenance required, repair in progress, bench check and repair in progress, troubleshooting (item), adjustment of (item) in work, etc. These statements can be used when 00 units is placed in the coded line entry identifying that the maintenance action being performed is placed on hold for work stoppage, crew size change or category of labor change.

4-14.2.2   Bench Checked (item) found serviceable; repaired (item); (item) has no output - repaired (item); hardware loose - replaced minor hardware on (item); removed and reinstalled (item) to FOM; troubleshot (item); inspected (item) - could not duplicate write-up no defect found; installed (item); calibrated (item); adjusted (item) - ops checked good; (item) had no output - bench checked and repaired; (item) loose - adjusted and ops checked good, etc. Used when 01 units is placed in the coded line entry identifying that the maintenance action being performed on the (item) is finally accomplished.

4-14.2.3   Complied with, completed (used only when 01 units is placed in the coded line entry identifying that a support general code with only one tasking towards it is accomplished such as; 031003--preflight inspection or TCTO).

4-14.2.4   WCE entered in error time taken to close WCE (Used only when 01 units is placed in the coded line entry identifying that the maintenance action being performed was opened incorrectly or needs to be closed due to a maintenance action being incorrectly coded). Reference paragraph 4-25 (Command and/or Activity Identification).

4-15   PARTS REPLACED DURING REPAIR (BIT/PIECE DATA).

Will be used to document the identification of failed parts replaced during on-equipment maintenance actions. This does not include major assemblies, subassemblies, or parts that are documented previously. Entries will be restricted to non-reparable and/or non-recoverable items that contributed to the failure of the end item being repaired. Entries for common hardware such as standard nuts, bolts, or seals that are replaced for convenience or to ensure quality of repair will not be included. Action Taken Codes are restricted to F or G for on equipment and A, F, or G for off equipment. Specific entries required for reportable parts replaced during repair are as follows:

4-15.1   FSC: Enter the federal supply classification code of the component or part identified by each line entry.

4-15.2   Part Number: Enter the part number of the component or part. If the item does not have a part number, enter the reference designator. For conventional munitions items, enter the part number of the item being replaced during repair as it is listed in the applicable WUC table. Include slashes and dashes between numerics only.

4-15.3   WUC: If a component or part that is replaced has an assigned WUC, enter the WUC. If the component or part does not have a WUC, enter at least the first two positions of the WUC, but use the closest one possible. For electronics equipment, enter the WUC of the next higher assembly rather than leaving this column blank.

4-15.4   Reference Symbol: This column is primarily for use in documenting actions for electronics equipment. However, as an option, it may be used for other equipment as outlined below:

4-15.4.1   When reporting maintenance actions on electronic equipment, enter the position within a circuit in which the failed part was installed. For example, V101, R101, or C405. The reference number stamped or printed on the chassis adjacent to the item being replaced will be used as the reference symbol entry. When a reference symbol is not available, a noun or an abbreviation of no more than nine characters that describes the part that is replaced may be entered in this column.

4-15.4.2   For other than electronics items, enter the noun of the part of an abbreviation of no more than nine characters; for example, brush, bearing, or armature. These entries are used primarily for base-level data products; therefore, the standardization of entries and abbreviations that are used is required only at a local level.

4-15.5   How Malfunctioned: Enter the how malfunctioned code that best describes the nature of the failure or malfunction of the part.

4-15.6   Quantity: Enter the quantity of parts, as related to each line entry, that were replaced during repair.

4-15.7   For depots, parts usage is collected in other information systems. For R&M purposes, depots need only report the part or parts that caused the actual discrepancy.

4-16   STANDARD REPORTING DESIGNATOR (SRD).

The SRD code consists of three characters, primarily used in various MIS to identify the many varieties of equipment in the AF inventory. The SRD enhances sorting and selection capabilities in these various MIS. It also facilitates the interchange of data from one MIS to another and is used to designate whether an item is Mission Capability (MICAP), MDD, and/or TCTO reportable.

4-16.1   All SRD codes are contained in the REMIS SRD table.

4-16.2   Guidelines for additional uses and for requesting changes, additions, and/or deletions to SRDs are contained in AFI 23-106.

4-16.3   For components being repaired at the depot received from the field, use the SRD from the AFTO 350 tag or automated version shipped with the item.

4-17   TYPE MAINTENANCE CODE (TMC).

The TMC consists of one character and is used to identify the type of work that was accomplished, such as scheduled or unscheduled maintenance. TMCs are contained in the appendix to this TO and REMIS push down tables. Special inspections, 04 series support general WUCs and maintenance performed during a special inspection will be documented using TMC "S"(special inspection), excluding transient maintenance.

4-18   COMPONENT POSITION.

The component position is a one digit numerical character which is used to identify the position of the installed engine, engine related item, or egress item. An entry is required when installing or performing maintenance on an installed engine or engine component. Engine work unit codes are those which begin with 21, 22, 23, 24, 25, 26, 27, 28, or 29. Valid component position entries for egress items are 0-8. If the engine or engine related part is not directly tied to a specific engine position, the entry will be zero (0). For example, the two water tanks on the KC-135 each service two engines, therefore the component position should be zero (0). An entry is also required when installing egress items. Egress items are identified by Egress Indicators.

4-19   WORK UNIT CODES (WUC).

The WUC consists of five characters, and is designed as quick reference numbers to identify system, subsystem, and component relationships within end items, and are used to identify maintenance require-ments, or maintenance accomplished. For R&M analysis, equipment failures should be reported to the fifth character whenever possible. WUCs provide a standard method of sorting maintenance data and of summarizing different levels of detail that is not applicable to all types of equipment. Also, provide the capability to use the data in maintenance or engineering programs by multiple, individual and subsystems, or components within each weapon or support system, or by end item of equipment. This capability is also used to assess corrective action. When combined with the SRD, a highly flexible and informative data retrieval capability is available, and is utilized at all levels of management. These codes are published in WUC tables and REMIS tables for each reportable weapon and support system, and by type of equipment for selected ground CEM, trainers, SE and/or AGE, munitions, TMDE, and shop work. Individual MAJCOMs have the option of using a limited number of WUCs assigned in a special category to identify tasks of a general nature, such as equipment servicing, cleaning, inspection, storage, ground safety, record keeping, weapons handling, and repetitive shop tasks. Although they are WUCs, they are identified as "support general codes." Alpha characters "I" and "O" are not used in WUCs to prevent confusion with the numerical characters "one" and "zero."

4-19.1   The first two characters of the WUCs for aircraft, ground radar, and missiles are standard system codes tailored to each type of equipment. The system codes identify functional systems, such as the flight control system, the radar antenna system, or the launch control system. The third and fourth characters of the WUC identify subsystems or major assemblies as applicable. The fifth character normally identifies reparable items, however, there are limited exceptions where codes are assigned for non-reparable critical parts and structural members. A WUC specifies a function, while a part number specifies an item.

4-19.2   The first two characters of the WUCs for SE and/or AGE identify types of equipment or end items of equipment, such as a trainer. The third, fourth, and fifth positions are assigned as described in paragraph 4-19.1 above. For SE and/or AGE, the first two characters of the WUCs identify the general type of equipment, the third character identifies the end item, and the remaining characters identify the subsystems or major assemblies and reparable components within the end item.

4-19.3   The first two characters of support general codes are standard in all WUC tables and tables, and identify categories of work such as cleaning, servicing, or special inspections. The first character is always "0" (zero). The last three positions of the support general codes for scheduled (03) and special (04) inspections identify the inspection category or type inspection.

4-19.4   The WUC in combination with an ATC is used to describe a "unit of work." An entry of one or more units completed must also be made to record a completed action. An example of a unit of work would be removal and replacement of an antenna. It would be documented with a WUC for the antenna, with an ATC for removed and replaced, and a unit count of one.

4-19.5   The WUC tables are prepared through the AFMC acquisition procedures and are delivered concurrently with new equipment. They are published in the applicable weapon or support system series, or in a general equipment series. For selected types of equipment, AFMC acquires an equipment list and is responsible for assigning the WUCs. For all equipment, AFMC is responsible for coordinating with the commands to validate coding requirements and for maintaining the currency of WUC tables. WUCs are prepared in accordance with military specifications in accordance with MIL-M-38769C (USAF).

4-19.6   The WUC tables are not published for equipment of which there are a small number in the AF inventory. When WUCs are not published for this reason, the system and subsystem codes from WUC tables of similar type equipment will be used to document maintenance actions. Use of the SRD or ID number of the equipment on which work was accomplished will identify the data as pertaining to this equipment regardless of the WUC table used. All systems with up channel reportable MDD will have a WUC table in REMIS. When available, these tables will be used in preference to the WUC manuals. Some systems being procured without WUC manuals and use the REMIS tables exclusively.

4-19.7   When work that cannot be related to an individual subsystem is performed on an entire functional system, or when the work cannot be related to an individual component is performed on a subsystem, the appropriate system or subsystem code must be used, respectively. Supervisors must insure that system codes are used only when the work definitely cannot be identified to an individual system, or in the case of subsystem, to a component. CAMS users may get a REMIS WUC table by processing screen #841.

4-19.8   The listing of "9" in the fifth position or a "99" in the fourth and fifth position of the WUC indicates the item on which work was performed is Not Otherwise Coded (NOC). A NOC entry would relate to the subsystem, and will be used only when a component of the subsystem or item on which work is required is not work-unit coded. Work performed on non-coded items that attach to a coded assembly, such as fittings or clamps, will be recorded using the WUC for the coded assembly.

4-19.9   The S-, C-, T-, and/or W-coded items in the WUC tables and references to these WUCs in this TO, pertain to items designated as serially-controlled, configuration controlled, time changed, or warranted.

4-19.10   Some MMISs may use Reference Designators (Ref Des) in place of a WUC. The Ref Des is alphanumeric and may vary in length up to 15 positions. Use of the Ref Des is limited at this time, but is expected to increase in future weapon systems.

4-19.11   When depot maintenance is performed on a reparable subassembly, the WUC entry on the AFTO Form 349 will be obtained from block 7 of the AFTO Form 350 attached to the subassembly.

4-20   ACTION TAKEN CODE (ATC).

The ATC consists of one character and is used to identify the maintenance action that was taken, such as the removal and replacement of a component. Action taken codes are standard for all equipment and are

listed in all WUC tables. A complete list of authorized ATCs is contained in the appendix to this TO and the REMIS pushdown tables.

4-20.1   ATC Entries: The ATCs will always identify the action taken to correct a deficiency, or the action performed on the item identified by the WUC entered in column C of the AFTO Form 349. Codes A, B, and C will be used only during bench check action. The bench check codes may be used on the AFTO Form 349 for reporting partial bench check completion provided that a "0" (zero) is recorded for units completed. Codes "1" through "9" and "D" can be used either during a bench check or during subsequent shop processing. Code "F" and other ATCs that are authorized for off-equipment work will be used when shop repairs are accomplished after reporting a "C"ATC at the time of bench check.

4-20.1.1   When ATC "G" (repairs and/or replacement of minor parts, hardware, etc.) will only be used when specific item being repaired or replaced does not have a WUC. When action taken code "G" is used, the WUC entry in column C will be that of the next higher or most directly related assembly to the part being repaired or replaced. For example, if a retaining clamp on a hose is being replaced and the clamp is not work-unit coded, enter the WUC of the hose. If the hose has no WUC, then enter the WUC of the item to which the hose is connected. Use the first WUC you encounter when following this "next higher assembly chain" upward from the repaired or replaced item; do not skip over any work-unit-coded items related to the repaired or replaced item. In the cited example, do not enter the WUC of the item the hose is connected to if the hose itself has a WUC. When using ATC "G," never use a NOC WUC.

4-20.1.2   For on-equipment work, ATC "H" (equipment checked - no repair required) will be used only when an inspection or operational check reveals that the reported discrepancy does not exist or cannot be duplicated, or when the apparent malfunction of an item is attributed to a failure of associated equipment. If the discrepancy does not exist or cannot be duplicated, how malfunctioned code 799 (no defect) will be used instead of a code which describes the reported discrepancy. How malfunctioned code "812" (no defect-indicated defect caused by associated equipment malfunction) will be used when the apparent malfunction of an item is attributed to a failure of associated equipment.

4-20.1.3   ATC "X" (test-inspection-service) will be used to report inspection, servicing, or testing of components removed from end items for in-shop actions that are prescribed in inspection requirements tables. For these actions, the WUC of the component will be entered in column C rather than the support general code of the inspection being performed on the end item. ATC "X" will also be used to document functional checks for items withdrawn from supply stocks. This code may also be used when an item is sent to another shop for test, inspection, or service action. ATC "X" (test-inspect-service) will be used for on-equipment operational checks that are not accomplished and a part of the installation or repair action. These deferred operational checks will always be recorded using the JCN of the original discrepancy.

4-20.1.4   ATC "Y" (troubleshooting) will be used when the troubleshooting is being reported separately from the repair action. WUC entries will be restricted to the defective system or subsystem that required the troubleshooting. Do not use item or component WUCs. When all troubleshooting action has been completed, the line entry to report troubleshooting will show one (1) unit produced. When ATC "Y" is used, the how malfunction code cannot be "799"(no defect).

4-20.1.5   If a bench check is completed and repair action is deferred, ATC "C" and "1"(one) unit will be entered on the AFTO Form 349. When a bench check is started but not completed, it should be documented with ATC "C" and a "0" (zero) unit entry. If reassembly of the item is required before placing it in an AWP status, an entry indicating the parts required should be recorded on block 29 of the AFTO Form 349 or on the attached AFTO Form 350 for future reference. This will eliminate unwarranted disassembly and reassembly until all of the required parts are received.

4-20.1.6   When completion of an in-shop repair action is deferred after ATC "C" (bench check deferred) and a unit complete has been recorded, the deferral of the repair action will be reported on an AFTO Form 349 using the applicable ATC and "0" (zero) units. The AFTO Form 350 will remain attached to the item for identifying reparable status and for a reference to document the repair action when work is resumed.

4-20.1.7   The NRTS ATC "1" through "9" have been established to identify the reasons for NRTS determinations. Selection of the NRTS code will be based on the most predominate cause for the inability to repair the item. Selecting the predominant cause when multiple causes exist and providing a single report input are mandatory to prevent distortion in the number of failures that are being reported. Items processed to local commercial contractors will be reported using ATC "D."

4-20.1.8   Code "1" will be used only when the repairs required to make the item serviceable are specifically prohibited in TOs containing base-level repair restrictions (TO 00-20-3).

4-20.1.9   Code "2" will be used when repair is authorized but cannot be accomplished due to lack of equipment, tools, skills, or facilities. This code may be used when authority has not been granted to obtain necessary tools or test equipment. However, the lack of tools and test equipment will not take precedence over NRTS code "1," lack of authority to perform repairs, when base repair is specifically prohibited.

4-20.1.10   Code "8" will be used when items that are authorized for base-level repair are directed to be returned to depot facilities by specific authority from the IM or system manager. Items that are forwarded to a depot facility under this code will be shipped complete with all recoverable parts and subassemblies that constitute a complete assembly, unless shipment of the assembly without all parts and subassemblies has been specifically authorized in writing (TO 00-20-3).

4-20.1.11   Off-Equipment workcenters can use action taken codes E, P, Q, R, S, T, and U to identify major removal and replacements of items. Note that on-line users should ensure accuracy of these inputs because once entered, no corrections can be done toward any of the codes on the DDR line.

4-20.2   When a determination is made that an item requires a DR, refer to TO 00-35D-54 for instructions on handling of DR exhibits. If repair is not authorized, the AFTO Form 349 will be closed out with an ATC "C." If the item is to be shipped as an DR exhibit, an AFTO Form 349 will be completed using action taken NRTS code "8."

4-21   WHEN DISCOVERED CODE (WDC).

The when discovered code consists of a one character and is used to identify when a defect or maintenance requirement was discovered. When discovered codes are contained in the appendix to this TO and REMIS push down tables. CAMS users may get a WDC listing by processing CAMS screen #126, TRIC, QBC. Individual when discovered codes may have more than one application; and for all discrepancies, the when discovered code assigned when the discrepancy was first discovered will be used for all subsequent repair actions. WDCs are controlled by HQ AFMC/ENB.

4-21.1   When the discrepancy is discovered during a depot-level overhaul, the on-equipment record will use WDC "S."

4-21.2   If the item under repair came from another location, use the WDC recorded on the AFTO 350 or automated equivalent.

4-22   HOW MALFUNCTIONED CODE.

The how malfunctioned code consists of three characters and is used to identify the nature of the defect and not the cause of discrepancy. To provide maximum utility, these codes are also used to report accomplishment of TCTO actions, or to show certain actions that can occur on items when neither a failure nor a defect existed. How malfunctioned codes are contained in appendix to this TO and REMIS push down tables. HMCs are controlled by HQ AFMC/ENB.

NOTE

Due to the nature of support general type work, the recording of action taken, when discovered and how malfunctioned codes are not required with support general WUCs.

4-22.1   How Malfunctioned Code Entries: The how malfunctioned codes are designed to identify the nature of the defect and NOT the cause of the discrepancy. This code will always identify the nature of the defect that existed on the system, subsystem, or component identified in column C. The how malfunctioned code entry on the reverse side of the AFTO Form 349 (block 29E) will identify the nature of the defect for parts replaced during repair. For support general work, column F will be left blank. How malfunctioned codes are contained in the appendix to this TO.

4-22.1.1   The number of how malfunctioned codes is maintained at a minimum to simplify reporting. The codes do not, therefore, specifically describe all conditions that may be encountered during maintenance. If there is not a specific how malfunctioned code that describes the condition, the code that most nearly identifies the nature of the defect will be recorded in the how malfunctioned code column.

4-22.1.2   The listing of how malfunctioned codes also contains some no defect codes to identify certain actions that can occur on items when a failure has not occurred, a defect does not exist, or to report accomplishment of TCTO actions.

4-22.1.3   A single how malfunctioned code will be used on the maintenance record to report failure or malfunction of an item. If more than one defect exists on the same work-unit-coded item at the same time, only the most predominant defect will be reported against the item. Other defects will be corrected at the same time, and man-hour expenditures for all work required will be reported on the line entry pertaining to the predominant failure or malfunction. This rule does not apply when defects are discovered on other work-unit-coded items within the same system or subsystem. In these cases, separate line entries will be made on the maintenance record to identify these defects.

4-22.1.4   How malfunctioned code "553" (does not meet specification, drawing, or other conformance requirements) will be used to identify improper manufacture or overhaul of components or parts that have been issued from supply stock. This code will not be used in conjunction with the reporting of repair actions on failed items. This code is only used with when discovered code "Y" (upon receipt or withdrawal from supply stocks).

4-22.1.5   How malfunctioned codes 242 failed to operate and 374 internal failure can only be used with ATCs 1 through 9 and C and D. The use of 242 and 374 with any other ATC in "off-equip-ment"documentation will be rejected as an error.

4-22.1.6   HMC "800" (no defect - component removed and/or reinstalled to facilitate other maintenance) will be used whenever a job involves removal and/or reinstallation of a work-unit-coded component to gain access to an item or area. The removal and/or replacement of separately work-unit-coded access panels or subassemblies that are related to the repair action will be treated as part of the repair action.

4-23   UNITS.

The units entry permits the identification of completed maintenance actions and actions that were in progress but not completed or actions in which a workcenter participated but was not the workcenter assigned primary responsibility for completion of the action. One of the following must be met for a unit produced: Completion of a TCTO, or completion of the Look portion of a Phase or Inspection. When documenting a time change, unscheduled maintenance action, or scheduled Fix Phase action when a new Action Taken is to be used, and the last action has been completed.

4-23.1   A unit entry of "1" (one) will be documented when a completion action is to be reported. The unit entry identifies the number of times the action taken was performed on the item or the number of times the support general action was performed. When a bench check is deferred for Awaiting Parts (AWP), it will be reported as a completed maintenance action. For job flow packages, TCTOs, and class II mods, the prime work center will document a unit entry of "1"or more to report completion of all actions that make up the package. All other workcenters will document "0" (zero) units to indicate partial job completion. Package maintenance documentation procedures may be applied for periodic, phase or other inspections, TCTO compliance and special inspections. This paragraph is not applicable to depots.

4-23.1.1   A unit entry of more than one in column G indicates the number of times that the action taken (column D) was performed on the item identified in column C or the number of times the support general action identified in column C was performed. An entry of "0" (zero) in this column indicates that the workcenter identified in block 2 did not have primary responsibility for completion of the maintenance action or that the action stopped prior to completion.

4-23.1.2   When a line entry is closed out for work stoppage, crew size change or category of labor change, the appropriate Action Taken code and "00"units will be entered to record the action. When that action is restarted, carry forward the same Action Taken code until that maintenance action is complete, then document units reflecting the number of times that action occurred. Do not begin another action until the first action has been completed. This paragraph is not applicable to depots.

4-23.1.3   Units entries are limited to a two digit number. If it is necessary to report more than 99 units, an additional line entry will be used to reflect the additional units completed.

4-23.2   The documentation of units in column for TCTO actions requires special documentation proce-dures. The documentation of TCTO actions on an end item or on a commodity using how malfunctioned codes 793, 796, 797, 802, or 911 will always be documented with a units entry of "0" (zero). Documenting

TCTO compliance action on an end item of equipment using how malfunctioned codes 798 and 801 will always require a units entry of "01" (zero one).

4-24   CATEGORY OF LABOR.

This data element is used to differentiate types of man-hour expenditures. If all members of a maintenance crew are the same category of labor, only one entry is required. If more than one category of labor (military and civilian) is performing the same maintenance task, or if overtime man-hours are expended, an entry is required to reflect each category of labor. Care must be taken in documenting the crew size and units to prevent erroneous man-hour and unit data. Reference appendix C of this TO.

4-24.1   Any man-hours expended by an individual technician in excess of his normal duty shift (as reflected on the master workcenter, normally 8 hours) must be documented as overtime. In no case can an entry have an elapsed time (difference between start and stop hours) greater than 10 hours for a maintenance action.

4-24.2   The category of labor is not used at depot level.

4-25   COMMAND AND/OR ACTIVITY IDENTIFICATION.

All maintenance performed on transient aircraft and equipment with no local ID number assigned must have the two-position command code entered for the owning command for work-unit-coded items and for support general. The command code must also be used when reporting off-equipment maintenance using only the SRD code. When used as an activity identifier, a locally devised two-position code can be used to identify the following: special projects, tenant support, cross utilization training, or any other locally required purpose. Major command and reporting designator identity codes used for MDD are listed in appendix B of this TO. When it is determined that a maintenance action has been documented incorrectly in CAMS and cannot be corrected using normal JDD correction options, enter "ER" in the activity identifier (AI). The "ER" coded line entries should be excluded from data compilations and analysis since they denote invalid data entries (MAJCOM option).

4-26   EMPLOYEE NUMBER.

The employee number serves to identify the individual who has recorded a maintenance action. For bases not supported by CAMS, the employee numbers are locally assigned and must be unique within a workcenter. Bases supported by CAMS a five-position employee number is programmatically assigned when the individual is loaded to the CAMS database. This employee number is unique and will be used for documenting maintenance actions.

4-26.1   When two or more individuals from the same workcenter are involved in a maintenance action, the employee number of the team supervisor or senior member should be used to record the action.

4-26.2   Employee numbers will be shown on the Maintenance Personnel Listing (AFSCM 21-556).

4-26.3   For decentralized maintenance organization units, AFSCs will be entered in the applicable data field.

4-27   START AND STOP TIME.

The start and stop time entries will always reflect the time expended by the individual or crew for the work described. The start and stop time entries will be completed to close out the line entry for any delay or work stoppage which exceeds 15 minutes, and for crew size or category of labor changes. The start and stop time entries, when considered with the crew size, produce the total man-hours expended to accomplish the maintenance action. Start time and/or stop time will be the Julian day, hour, and minute that the task was completed. Start or stop times for midnight will be documented as "2400."

4-27.1   The documented time range of the start and stop time toward a maintenance action, can only be used once on the same Julian date per employee number.

4-27.2   A common problem among maintenance workcenters is the erroneous documentation of NRTS actions. This documentation has identified in some cases, handling to and from supply as part of the NRTS time documented in CAMS. Time documented for NRTS action should consist only of the accomplishment of the bench check as applicable and the NRTS paperwork as long as the combined time does not exceed 10 hours. If the bench check exceeds 10 hours, document the first line entry as a bench check-repair deferred and follow up with the appropriate NRTS action.

4-27.3   Shifts are normally 8 hours, but may be up to 10 hours. This is a MAJCOM option.

4-27.4   Supervisors accomplishing direct labor will report the time expended. This is done to account for the cost of ownership and operation. It is also used to compute the "mean time to ..." equations.

4-27.5   Start and stop times are not used at depot level. Depots report the total actual man-hours required to complete the job. Depots will record the date the job was completed for configuration reporting.

4-28   CREW SIZE ENTRIES.

The one digit crew size entry will always reflect the number of individuals from the same workcenter (same category of labor) that actually participated in the maintenance action during the period of time documented identifying the action. Participation is defined as: "expending direct labor accomplishing required maintenance." A zero is used when it is necessary to document package reporting for completion of an inspection or when how malfunctioned codes 793, 796, 797, 802, and 911 are used for TCTO actions. When the crew size exceeds nine, an additional entry will be used to reflect the additional number of technicians. Depots do not use crew size. Refer to paragraph 4-27.4.

4-29   BUILT-IN-TEST (BIT) FAULT REPORTING.

Systems that have BIT fault reporting will report fault codes (primary if multiple codes) in block 16 of the AFTO Form 349, the appropriate field of an automated system, or in the discrepancy narrative. When more than one fault code is recorded for a single discrepancy, enter the additional fault data in the discrepancy block.

4-30   MASTER JOB STANDARD NUMBERS (MJSN).

MJSNs are used to facilitate the automated transfer of weapon system time change and inspection data between bases, and between bases and depots. MJSNs will be used to report Inspections, Time Change Item and Serially tracked installations. If the first position of the MJSN is an alpha character, the MJSN is standard across weapon systems. On the AFTO 349, the MJSN will be placed in block 18.

Table 4-1. Assignment of JCNs MA

STEP	A	B
	For	**Maintenance Control, Munitions. Control, or Activities Block, of JCNs Will**
1	the removal and replacement of serially-controlled items or time change items	Assign an individual unique JCN
2	engine changes	
3	equipment discrepancies (failure defects, damage or similar conditions	
4	TCTO actions on end items or commodity TCTOs on installed items	
5	cannibalization actions ∗	
6	hourly or calendar phase inspections	
7	periodic, hourly postflight, major isochronal minor isochronal, home station checks, or ground C-E inspections ∗ ∗	
8	special inspections, when not accomplished during the scheduled inspections identified in steps 6 and 7	
9	each major discrepancy written up during the inspections identified in steps 6, 7, or 8 which is corrected, or for any discrepancy that is carried forward because it is not corrected; or for any discrepancy that requires ordering items from supply	
10	the accomplishment of support general work other than inspections	Assign either an individual unique or grouped JCN (local option)
11	the accomplishment of daily preflight, basic postflight, thruflight, shift verification, scheduled storage and ground C-E	
12	the accomplishment of commodity TCTOs and spare items that were not removed for end items for modifications and reinstallation	Assign a grouped JCN
13	the functional check of items withdrawn from supply	

For maintenance actions which are the results of any inspection identified in steps 6, 7, or 11, the JCN will be the same as that assigned to the inspection, except for those maintenance actions addressed in step 9.

∗ The same JCN will be used for both the "T" and "U" action.

∗∗ See figure 4-1 for unique sixth digit requirements.

PHASE INSPECTIONS

Phase or Package**	Sixth Position JCN Entry	Phase	Sixth Position JCN Entry
1	A	14	P
2	B	15	Q
3	C	16	R
4	D	17	S
5	E	18	T
6	F	19	U
7	G	20	V
8	H	21	W
9	J	22	X
10	K	23	Y
11	L	24	Z
12	M	25	1
13	N	26	2

** Each specific inspection package in an inspection cycle (-6 requirements) will be identified by JCN sixth position alpha sequence (e.g., for F-15: HP01=A, HP01=C...PEZ+M; A-1=A, A-2+B, A-3=C...C-3=M)

OTHER INSPECTION

Inspection	Sixth Position JCN Entry
Periodic calendar inspections with an interval of seven days or greater, and C-E inspection of any interval.	A
Minor isochronal inspections.	B
Minor isochronal inspections.	C
Hourly post-flight inspections	D
*Home stations checks.	E

NOTE

These JCNs will not duplicate the phased inspection JCNs because the same work-center would not accomplish different types of major inspections on the same MDS equipment on the same day.

* When home station check is accomplished in conjunction with major isocronal inspection, code the sixth position JCN entry in accordance with the respective major or minor sixth position JCN entry.

C-E calendar inspections.

Seventh Position

C-E may have any alpha except "O" and "I" in the seventh position.

Figure 4-1. Sixth and Seventh Position JCN Entries

CHAPTER 5

REPORTING REQUIREMENTS FOR CANNIBALIZATION ACTIONS

5-1   GENERAL.

This chapter prescribes rules in table 5-1 for documenting and reporting cannibalization actions. AF Form 2414, VERIFICATION WORKSHEET, (or an automated system) will be used to document cannibalization.

NOTE

> Cannibalization may result in expenditure of maintenance resources above what is normally authorized to accomplish mission requirements. Mainte-nance managers will resort to cannibalization of equipment only in unusual situations and after consideration of man-hour availability and risk of dam-aging serviceable equipment. Since cannibalization may be indicative of support problems, maintenance managers also are responsible for identify-ing the causes of cannibalization and taking appropriate action. Fluctua-tions in the cannibalization rate should, therefore, be investigated.

5-2   DEFINITION.

Cannibalization is the authorized removal of a specific assembly, subassembly or part from one weapon system, system, support system or equipment end item for installation on another end item to satisfy an existing supply requisition and to meet priority mission requirements with an obligation to replace the removed item. Weapon system, support systems, or equipment end items include aircraft, missiles, drones, Unmanned Aerial Vechiles (UAVs), uninstalled engines, uninstalled engine modules, aircrew and/ or launch crew training devices, C-E equipment, AGE, TMDE, automatic test equipment, serviceable uninstalled ECM pods, and guns.

5-2.1   The following maintenance actions to obtain assemblies, subassemblies, or parts require cannibali-zation documentation:

5-2.1.1   Cannibalization of assemblies, subassemblies, or parts for "on-equipment" repair. This includes in-shop exchange of engine components.

5-2.1.2   Cannibalization of items to satisfy a MICAP condition for either "on" or "off" equipment repair. AWP status for off equipment.

5-2.1.3   Cannibalization of items to support deployment kits.

5-2.2   The following maintenance actions to obtain assemblies, subassemblies, or parts are considered transfers and will not be treated as cannibalization actions:

5-2.2.1   Assemblies, subassemblies, or parts obtained from spare C-E equipment, major assemblies, and Quick Engine Change (QEC) kits for off-equipment repair.

5-2.2.2   When missions dictate installation of an item due out, released or issued for one weapon system, system, or end item to satisfy a higher priority requirement on another weapon system, system, or end item.

5-2.3   Cannibalization data provides information to logistics decision makers. It is used to evaluate supply and repair shortages. Cannibalization man-hours are often used to help justify repair actions and spares procurement.

5-2.4   Cannibalizations from depot possessed weapon systems will not be accomplished without the writ-ten approval of the SM.

5-3   DOCUMENTATION.

When documenting a cannibalization action, use the specific WUC of the assembly, subassembly, or part that is being cannibalized. If the assembly, subassembly, or part being canned does not have a specific

WUC, the appropriate "NOC" WUC from the system and/or subsystem being worked will be used. When documenting a cannibalization, use a single JCN.

NOTE

If a part being cannibalized is reparable and does not have a specific WUC and the NOC WUC is used, the technician will submit an AFTO Form 22 requesting a WUC be issued for the assembly, subassembly, or part.

5-3.1   ATC "T" will be used to document the removal of the serviceable item. This is a mandatory entry and will be documented as soon as practical after the removal action is completed.

5-3.2   ATC "U" will be used to document the installation of the serviceable item replacing the one canned. This is a mandatory entry and will be documented following completion of the installation.

Table 5-1.   Preparation of AFTO Form 349 and AF Form 2414 when automated systems are not available

		A	B
STEP		**For cannibalization**	**take these steps***
1		maintenance control function	initiate two (2) maintenance actions; one for removal, the other for replacement of cannibalized components
2			document items 1, 2 **, 3, (4 - 5 when applicable), and columns A, C, D, E, and F on both records.
3			document the removal records with a "T" ATC in column D, HOW MAL code 799 (875 for engines) in column F, a check (✓) in block 28 and a statement * in block 26.
4			document the replacement record with a "U" ATC in column D, 799 (875 for engines) in column F, a check (✓) in block 28, and a statement * in block 26.
5			ensure that the cannibalization action is approved by the maintenance control supervisor or his designated representative(s). (For ICBM maintenance units, the chief of maintenance must approve cannibalization actions.)
6		Maintenance supply liaison function will	document blocks 23 through 3Q on the AF Form 2414.

*   Item 26 will include a statement identifying the equipment serial number from which the end item was removed and the equipment serial number on which the end item is to be installed.
**   Item 2 need not be documented by maintenance control function when a maintenance shop has two or more work centers which perform the same function (e.g., active and reserve). In this situation, block 2 entry will be documented by the performing work center. Item 14 may be used by maintenance control function to indicate the appropriate shop by using an abbreviated method, e.g., AR, SM, ENG.
*** Units using automated systems will use the appropriate cannibalization screens.

NOTE

When a unit has geographically separated detachment, the chief of mainte-nance has the option to develop local procedures to ensure the reporting requirement outlined in steps 3 and 4 are accomplished.

CHAPTER 6

DOCUMENTATION OF SUPPORT GENERAL AND CONSOLIDATED

MAINTENANCE EVENTS

6-1 CONSOLIDATED MAINTENANCE DATA COLLECTION PROCESS/EVENT CONSOLIDATION.

6-2 PURPOSE.

6-2.1 Event consolidation provides a method to collect maintenance data while reducing keyboard time for the maintainer and the number of records stored in the MDD system. This is done by reporting all time expended toward a maintenance event as a single entry, rather than reporting time for each individual task.

6-3 APPLICATION.

6-3.1 For example, a maintainer is dispatched to replace a part or LRU. He/she may expend time performing troubleshooting, inspecting, removals, and replacements to Facilitate Other Maintenance (FOM), operational checks, and other tasks related to the replacement of the part itself. Rather than report each of these actions individually, all the time will be reported against the replacement action.

6-3.2 Time expended by assisting workcenters may not be consolidated by the primary workcenter, but may be consolidated within itself

6-3.3 Major commands hold the option to implement event consolidation for on and off-equipment maintenance. They may also elect to collect detailed data as circumstances require. Details should be contained in major command instructions.

6-3.4 Major commands are requested to provide a copy of implementation instructions to HQ AFMC/ENB.

6-4 EXCEPTIONS.

6-4.1 Time expended troubleshooting C-E equipment will not be consolidated.

6-5 SUPPORT GENERAL DOCUMENTATION.

6-5.1 Support General Documentation records are those maintenance actions that are considered routine in the day-to-day support of the weapon system operation. Support General includes parking, fueling, cleaning, documentation, unpacking, scheduled and unscheduled inspections, etc.

6-5.1.1 Scheduled and unscheduled inspections need to be recorded as records are maintained and schedules can be updated.

6-5.1.2 Fabrication 09000 is in direct support of the system and should be reported.

6-5.1.3 Other normal Support General actions do not need to be recorded except as noted below.

6-5.1.4 Special data studies may be initiated at the request of the Single Manager with the agreement of the MAJCOMs involved. Such studies should have defined objectives.

6-5.1.5 MAJCOMs have the option of requiring Support General reporting, with the exception of 03000 and 04000 (see Appendix I NOTE).

6-5.2 MAJCOMs should define Support General documentation policy in appropriate directives.

6-5.3 The AFTO Form 781P may be used to record support general actions when an automated system is unavailable.

CHAPTER 7

DOCUMENTATION OF MAINTENANCE ACTIONS ON WEAPON SYSTEMS,

END ITEMS, ASSEMBLIES, SUBASSEMBLIES, AND PARTS

7-1 PURPOSE.

The purpose of this chapter is to prescribe the policy and rules for documenting maintenance performed on weapon systems, support systems, and equipment.

7-2 GENERAL DOCUMENTING RULES.

7-2.1 General: The peculiar entries required on maintenance records for documenting maintenance actions involving TCTO, serially-controlled items, warranty tracked items and TCI are identified in this chapter.

7-2.1.1 The documenting rules in this chapter prescribe specific entries or codes to be entered. To simplify these instructions, only the peculiar block entry requirements are specified in this chapter, the instructions in paragraph 9-3 will be used to complete all other form entries.

7-2.1.2 The peculiar documenting rules prescribed by this chapter require additional or unique data input actions. Therefore, other maintenance actions will not be reported on the same maintenance record that is used to report these actions unless specified in this chapter.

7-3 DOCUMENTATION RULES FOR TCTO ACTIONS.

7-3.1 Documenting rules for off-equipment TCTO actions are contained in this paragraph and must be used in conjunction with the TCTO documenting rules for on-equipment maintenance applicable to the type of equipment in which the component is used (7-2 for aircraft, 7-4 for ICBM components, etc.). The reporting of TCTO actions is monitored by documentation activity as outlined in AFI 21-101. The reporting of TCTO actions must be compatible with the monitoring method used. When a commodity item is removed to accomplish a TCTO in the shop and there is no system or end item TCTO for removal of unmodified and/or installation of the modified item, the action will be reported as a normal removal or replacement. No TCTO compliance will be reported against the weapon system, support system, or equipment end item since modification will be reported by the shop personnel as prescribed in paragraph 7-8. For these occasions, how malfunctioned code 804, no defect removed for scheduled maintenance, should be used.

7-3.2 Documenting rules for off-equipment TCTO actions depend on the type of equipment on which the component will be used. Therefore the instructions for documenting off-equipment TCTO actions contained in this paragraph must be used in conjunction with the TCTO documenting rules contained earlier in this TO. Basically, an off-equipment TCTO action is documented on the AFTO Form 349 or automated workorder with entries in blocks 1, 2, 5, 19, 20, (and block 21, when applicable); and columns A through N.

7-3.3 If a commodity category TCTO action is accomplished on a spare component that is withdrawn from supply for modification prior to installation on a weapon system, support system, or equipment end item, the maintenance record will be completed with entries in blocks 1, 2, 5, 19, 20, (and 21 when applicable), and columns A through N.

7-4 DOCUMENTATION RULES FOR SERIALLY CONTROLLED, WARRANTY TRACKED ITEMS AND TIME-CHANGE ITEMS.

7-4.1 Documenting off-equipment maintenance actions involving-serially-controlled items and warranty tracked items requires special rules for reporting removal, replacement, initial installation of serially-tracked subassemblies in a serially-controlled assembly, and serially tracked (non-configuration managed) subassemblies that removed for repair from a serially tracked (configuration managed) assembly. These subassemblies are identified by an asterisk in the WUC table. To document actions involving serially-controlled/serially tracked subassemblies and warranty tracked items, one maintenance record is required for each removal and replacement of a serially-controlled/serially tracked and warranty tracked items

subassembly in addition to the record that is required to document the maintenance action for the assembly. The record used to record the maintenance action for the assembly will be completed using normal off-equipment documenting procedures.

7-4.2   To document the removal and/or replacement of serially-controlled/serially tracked subassemblies from their next higher assembly, ATCs E, P, Q, or R will be used, as applicable. These codes are normally restricted to use in documenting onequipment maintenance actions; however, these codes are authorized for in-shop use in this case. The following paragraphs specify form entry requirements for the record when documenting the removal and/or installation of serially-controlled/serially tracked subassemblies from their next higher assemblies.

NOTE

> If the removal and replacement actions for serially-controlled/serially
> tracked subassemblies are not accomplished concurrently, the form that is
> used to document the removal action with a line entry completed using a
> "P" ATC will be retained as a suspense document for the subsequent instal-
> lation action and the completion of another line entry with an ATC "Q."
> Since the AFTO Form 349 for the assembly will reflect the applicable units
> and man-hour entries, this suspense form may be held for the time specified
> in chapter 3 of this TO.

7-4.3   For off-equipment documentation, ATC "E" will be used only for initial installation of serially-controlled/serially tracked subassemblies for parts identified by an asterisk in the WUC table for ACMS weapon or support systems. Initial installation refers to "ship short" components, new components installed as a result of a modification, or items that are being installed for which the removal document is not available. If the next higher assembly is not the aerospace vehicle or engine; the FSC, part number, and serial number of the next higher assembly will be recorded to identify the assembly in which the item identified is being installed. This procedure is required to provide the identity of the next higher assembly, as well as the identification of the item being installed. Each action involving ATC "E" must be documented using a separate record. Documentation of an ATC "E" maintenance action requires a separate JCN.

7-4.4   A separate record will be required for each serially-controlled/serially tracked subassembly that is removed from an assembly and shop processed separately. The tag number from the AFTO Form 350 that is prepared for the removed item will be entered.

7-4.5   When serially-controlled/serially tracked subassemblies are removed from one assembly for installation in another assembly, the recording procedures prescribed above will be applied for each assembly involved. For example, if serially-controlled/serially tracked subassemblies are interchanged between two unserviceable assemblies to make one of the assemblies serviceable, records are required to document the removal and installation actions for each subassembly involved. When documenting actions involving the interchange of serially-controlled/serially tracked subassemblies, particular care must be exercised to ensure that the applicable JCN and tag number are used as specified above.

7-4.6   Off-equipment removal and replacement of time-change subassemblies, identified by a T in the WUC table requires special entries on the maintenance record. Removal and replacement of time-change subassemblies from assemblies removed from weapon systems, support systems, or equipment end items are documented with normal entries on the record. This off-equipment document will identify the repair action on the assembly using the applicable repair ATC.

7-4.7   ATC "E" (initial installation) will be used for reporting initial installation of components. Initial installation applies to "ship short" components, new components installed as a result of modification. To document the removal and/or replacement of serially-controlled/serially tracked subassemblies from their higher assembly, ATCs E, P, Q, or R will be used, as applicable.

7-5   DOCUMENTATION OF TRAINING EQUIPMENT MAINTENANCE.

Maintenance documentation for configuration managed training equipment which makes up, or is a part of Mobile Training Set (MTS) or Resident Training Equipment (RTE) will be accomplished in a manner prescribed for operational equipment of the same type. Specific instructions are included in this TO, where applicable.

7-6 ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR AIRCRAFT, AIR LAUNCHED MISSILES (EXCEPT ICBMS), DRONES, AND RELATED TRAINING EQUIPMENT.

7-6.1   Weapon System, Engine, and Equipment Identification: An ID number will be assigned to all base assigned equipment on which maintenance may be performed. Transient aircraft, shop support for base supply and conventional munitions will not require an ID number. Also, SE or C-E being repaired by a central repair facility, for other activities, will not require an ID number. Procedures for the local assignment of serial numbers to equipment for which an AF serial number has not been assigned are contained in AFM 23-110. When SRD codes indicate non-AF, "non-AF" must be entered in place of the ID number. See paragraph 4-4 for more information.

7-6.1.1   The removal and/or installation of aircraft items having unique SRD codes assigned requires individual item ID information in addition to the weapon system ID. This category of items includes missiles, drones, engines, guns, and pod systems. When in-shop, on-equipment work is performed or a two or 35 category TCTO completed on either installed or removed items, the individual item ID number will be used. Maintenance action performed on installed systems will be identified to the installed system. Compliance with this paragraph is dependent on the capability of the data system in use.

7-6.1.2   Life support (personal) equipment maintenance performed in an on-equipment environment will be documented utilizing the applicable aircraft SRD code and WUC for the item as contained in the aircraft WUC table and/or REMIS manual. Emergency radio equipment, installed in the aircraft, that is not life support equipment will be documented using the aircraft SRD code and the applicable WUCs.

7-6.1.3   Maintenance actions for uploading or downloading weapons release or launch equipment from aircraft or drones for either mission configuration or failures will be documented using the aircraft or drone ID. Removal of weapons release or launch equipment due to failures or maintenance discrepancies will be documented using the weapons release or launch equipment WUC from the aircraft code table with the applicable action taken, when discovered and how malfunctioned codes. Shop work on weapons release and launcher equipment will be documented as off-equipment maintenance.

7-6.2   ECM Pods, Communications Security (COMSEC) and (Cryptologic Documenting Procedures: Management requirements for Pods and cryptologic equipment also dictate unique documentation procedures. If the Pod is being removed due to pod failure, the removal should be documented using the appropriate Pod WUC from system "76" of the aircraft WUC table (for example, "76CEO" for the AN/ALQ 131) and the ID number assigned to the aircraft. All work performed on a Pod in the shop or while on the parent weapon system will be documented utilizing the on-equipment concept. On-equipment maintenance performed on installed COMSEC and cryptological equipment will be documented using the ID number of the aircraft and applicable WUC from the aircraft 06 code table and/or applicable WUC manual. Maintenance performed on COMSEC and cryptological equipment end items removed from the aircraft will be documented in accordance with TO 00-70-2-8 with COMSEC and/or cryptological equipment ID number and WUC from the AFKAM 504 table. The above process is dependent on the capability of the information system to accept the data inputs.

7-7 MAINTENANCE DOCUMENTATION FOR ICBM.

ICBM-unique MDD procedures and documentation rules are contained in this paragraph. Some requirements defined elsewhere in this TO are repeated here using examples couched in missile terms for clarity. If a particular situation is not discussed here, refer to the standard documentation rules found in chapter 4 or paragraph 7-1 of this TO.

7-7.1   The EMDAS/IMMP will be used to document on-equipment and off-equipment maintenance actions performed by missile maintenance work centers on ICBM equipment. ICBM equipment is defined as that equipment listed in the ICBM WUC tables: (i.e., missiles, Launch Facilities (LF), Launch Control Facilities (LCF), SE and/or AGE, RPIE, special purpose vehicles, trainers, etc.).

7-7.2   Non-missile maintenance organizations (i.e., communications, civil engineering, etc.) who perform maintenance on ICBM equipment and are served by both EMDAS and another data system which supports MDD input (CAMS, PAMS, etc., see paragraph 1-5) may determine locally which system will be used for MDD input. The system used should have a viable interface to the REMIS computer system (see paragraph 2-2). This decision must be made jointly with the MDD, EMDAS, and other system(s) base-level OPRs. As a general rule, if the workload requirement or discrepancy is loaded in EMDAS, the MDD documentation should also be entered in EMDAS to ensure that the EMDAS history database contains complete information concerning the corrective action(s) required to clear the discrepancy.

7-7.3   Data is input in the EMDAS system via formatted on-screen forms called displays. TO 33D9-61-76-1 contains more information on the FMDD display.

7-7.4   Documentation of support general maintenance is required only when the applicable support general WUCs (WUC 00000 series) appear in the WUC table for the equipment being repaired.

7-7.5   ICBM unique rules for documenting MDD data fields are listed below. The block numbers below refer to the EMDAS FMDD display. If a particular block is not discussed here, use the standard documentation rules found in chapter 4 of this TO.

7-7.5.1   BLOCK 1, JCN. The JCN is used to tie together all actions, whether performed on or off-equipment, relating to correction of a discrepancy or accomplishment of an inspection or modification. For ICBM purposes, this means that the original fault reported at the ICBM site, troubleshooting, removal and/or replacement or repair of faulty components on-site, and any subsequent on base repairs to the faulty components must all use the same JCN.

7-7.5.2   BLOCK 3, ID NUMBER. The ID number in EMDAS consists of six characters and is used to identify the equipment on which work was performed or from which an item was removed. The first character of the ID number is the first character of the workcenter which owns the equipment. For ICBM owning workcenters this character is M (see appendix A). The second character of the ID is the first character (prefix) of the SRD code for the equipment. For ICBM sites, LF trainers, and their components, the third character is the missile wing number and the last three characters are the alphanumeric site and/or trainer designator. For example, since ICBM sites contain three categories of equipment, AGE and/or SE, RPIE, and missile; LF H03 at Wing 5 would have three ID numbers - MG5H03, MR5H03. and MM5HO3, respectively. Maintenance actions involving the removal and/or installation of an ICBM from a site will be documented using the ID number assigned to the missile (MM5H03), not the AGE and/or SE or RPIE ID number for the site. The ID number for equipment not installed on-site is defined in chapter 4 of this TO.

7-7.5.3   BLOCK 4, MDS. If an ID number is entered in block 3, no entry is required. When the equipment does not qualify for an ID number under paragraph 4-4 of this TO, enter the MISS of the equipment. For equipment not assigned a MDS, enter the end item WUC preceded by two zeros.

7-7.5.4   BLOCKS, SRD. No entry is required if an ID is entered in block 3. If no ID is entered, refer to chapter 4.

7-7.5.5   BLOCKS 20 AND 23, PART NUMBER. For missile conventional munitions items such as propulsion units, igniters, warheads, fuses, squibs, or primers these blocks will contain the part number of the item. For items that do not have part numbers, enter the NIIN which is the first nine characters of the NSN.

7-7.5.6   COLUMN C, WUC. Actions involving TCTO and Command Directed Modifications (MCL) will be documented using the seven character TCTO and/or MCL data code. The first five characters of the data code will be entered in the WUC field (column C) and the sixth and seventh characters will be entered in columns D and E.

7-7.5.7   COLUMN D, ATC.

7-7.5.7.1   ATC "G" (repair and/or replacement of minor parts, hardware, etc.) will only be used when the specific item being repaired or replaced does not have a WUC. When action taken code "G" is used, the WUC entry in column C will be that of the next higher or most directly related assembly to the part being repaired or replaced. For example, if a retaining clamp on a hose is being replaced and the clamp is not work-unit coded, enter the WUC of the hose. If the hose has no WUC, then enter the WUC of the item to which the hose is connected. Use the first WUC you encounter when following this "next higher assembly chain" upward from the repaired or replaced item; do not skip over any work-unit-coded items related to the repaired and/or replaced item. In the previous example, do not enter the WUC of the item the hose is connected to if the hose itself has a WUC.

7-7.5.7.2   For on-equipment work, ATC "H" (equipment checked - no repair required) will be used only when an inspection or operational check reveals that the reported discrepancy does not exist or cannot be duplicated, or when the apparent malfunction of an item is attributed to a failure of associated equipment. If the discrepancy does not exist or cannot be duplicated, how malfunctioned code "799" (no defect) will be used instead of a code which describes the reported discrepancy. How malfunctioned code "812" (no defect -indicated defect caused by associated equipment malfunction) will be used when the apparent malfunction of an item is attributed to a failure of associated equipment.

7-7.5.7.3   ATC "X" (test-inspect-service) will be used for on-equipment operational checks that are not accomplished and a part of the installation or repair action. These deferred operational checks will always be recorded using the JCN of the original discrepancy.

7-7.5.7.4   ATC "Y" (troubleshoot) will be used whenever the troubleshooting is being reported separately from the repair action. WUC entries will be restricted to the defective system or subsystem that required troubleshooting. When all troubleshooting action has been completed, a units entry of one will be input on the "Y" action line.

7-7.5.8   COLUMN E, WHEN DISCOVERED CODE. The "abort" when discovered codes in the WUC table will be used only for the defect (primary condition) that caused the abort. Other defects that occur during the same launch or exercise that would in themselves cause an abort will be assigned the applicable "no abort" when discovered code. The debriefing activity or other appropriate function will, in conjunction with the missile crew, determine which specific item should be assigned an abort code.

7-7.5.9   COLUMN G, UNITS. Certain maintenance jobs consist of a group of separate actions for which overall or package documenting rules apply. Package documenting refers to jobs that by their nature require reporting by several workcenters or reporting over an extended time period with a number of line entries coded with "0" (zero) units to document partial job completion. At the completion of the job, a unit entry of "1" (one) is documented to report completion of all actions that comprise the package by the prime workcenter.

7-7.5.10   BLOCK 27, CORRECTIVE ACTION. Ensure that this entry fully describes the work accomplished.

7-8   ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR NOCM MATERIEL, RV/RS, AND RELATED TEST AND HANDLING EQUIPMENT (EXCLUDING NUCLEAR WEAPONS).

7-8.1   Peculiar Documenting Requirements for RVs/RSs: The following paragraphs specify peculiar documenting requirements for re-entry system.

7-8.1.1   When a serially-controlled subassembly is installed in an assembly prior to installation in a re-entry system and buildup of a re-entry system is not involved, the action will be documented. Documentation will contain the assembly serial number, the WUC (preceded by two zeros) the SRD, the subassembly part number, the subassembly serial number, and the previous operating time of the subassembly, if any. The appropriate data field will always reflect ATC "E." The subassembly WUC will be entered and other appropriate entries will be made.

7-8.1.2   The re-entry system buildup will be recorded to contain the re-entry system serial number, the WUC (preceded by two zeros), the SRD, the buildup support general code, and other appropriate entries. All man-hours associated with the buildup will be documented. The installation of individual serially-controlled items, marked with an asterisk in the WUC table, are not documented during the re-entry system buildup.

7-8.1.3   Upon receipt of a re-entry system in the munitions shop, make data entries from the AFTO Form 350, except for the ID and/or serial number entry and the TMC entry, that accompanies the re-entry system. The re-entry system ID number and munitions type maintenance codes will be used on all entries initiated in the munitions shop. This action will be held open until processing is completed; and will have a unit count of "1" (one) and "0" (zero) crew size entered when it is closed out. Re-entry systems removed for a scheduled inspection will be reported using an "X" (test-inspect-service) ATC, the appropriate when discovered code, and how malfunctioned code "804." Re-entry system components that are declared NRTS or condemned will contain ATC "1" through "9" as appropriate, regardless of the reason for which it was removed.

7-8.1.4   When a re-entry system, spacer, or penetration aids spacer is disassembled and packaged for storage or shipment with no intention of future assembly in the same serially numbered configuration, the disassembly will be reported by message to the directorate of nuclear weapons SA-ALC/ WPP or OO-ALC/ LIW. This message will include the serial number of the re-entry system, spacer, or penetration aids spacer and the date it was disassembled. A separate entry and AFTO Form 350 will not be required for each serviceable serially-controlled item that is removed for separate processing. Unserviceable or repairable items will require preparation of an AFTO Form 350. Documentation of maintenance actions on these unserviceable or reparable items will be in accordance with chapter 8.

7-8.2   Support General Recording: Support general work and the "look" phase of inspections accomplished on NOCM, re-entry systems and associated test and handling equipment will be reported to identify the end item on which work is being performed. If one end item is being worked on, the ID number, or the end item serial number, the WUC (preceded by two zeros), and the SRD will be entered, with a unit entry of "1." If the same support general actions, other than re-entry system buildup, are completed on more than one of the same type end item, the ID number of the first item worked on and the total number of units will be entered.

7-8.3   Reporting Weapon Conversions: When an end item WUC, serial number, or equipment classification code change is involved as a result of weapon conversion, the man-hours expended will be documented under the appropriate support general code, and the serial number of the warhead or basic assembly will be entered. Entries will contain the initial configuration WUC (preceded by two zeros), and the SRD. After conversion, the master ID file will be updated to reflect the new end item WUC, serial number, or equipment classification code. All future maintenance will be reported against the updated ID number. When no change to the master ID file is involved, standard documenting rules apply. Association of major assemblies for weapon conversions will be reported in accordance with TO 11N-35-50.

7-9   ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR SE AND AGE.

7-9.1   Documentation for TMDE: Maintenance actions (not involving calibration) which are performed on SE, that has installed TMDE items, by workcenters not assigned calibration responsibility for the equipment will be documented in accordance with instructions in this TO. Calibration and maintenance actions performed by workcenters that are assigned, the calibration responsibility for TMDE will be documented as prescribed in paragraph 7-8.

7-9.2   Documenting Engine Removal and/or Installation: All work performed on installed gas turbine engines will be identified to the SE end item. Reciprocating engines for SE will be treated as components for documentation of all maintenance and TCTO actions.

7-9.3   Documentation for AGE: Normal documentation rules apply for AGE.

7-10   ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR C-E EQUIPMENT AND COMSEC.

7-10.1   The AFTO Form 349 or an automated MDD system will be used for documenting on-equipment maintenance actions. The AFTO Form 349 will contain the end item ID number or serial number in block 3. When an ID number is entered in block 3, no entries are required in blocks 4 and 5, and column L since the ID number provides this information during data processing. In case the equipment has not been assigned an ID number, the serial number will be entered in block 3, the Joint Electronic Type Designator (JETD) (or the end item WUC for equipment that has not been assigned a JETD) in block 4, the SRD in block 5, and the owning command code in column L. The complete rules for formulations of ID numbers are included in paragraph 4-4 of this TO. Rules for local assignment of serial numbers to equipment for which an AF serial number has not been assigned are contained in AFMAN 23-110, vol. II.

7-10.1.1   End items with a SRD code assigned will be given an ID number, even though they may be installed in a larger system. Maintenance actions will be documented against the installed end item ID as opposed to the larger system ID.

7-10.1.2   For documentation purposes, non-JETD equipment, training equipment, and all COMSEC identified under National Security Agency (NSA) Telecommunications Security (TSEC) nomenclature system (i.e., TSEC/KY-57) and cryptologic equipment that does not have an ID number assigned will be identified by entering the end item WUC in block 4 of the AFTO Form 349 or equivalent data field.

7-10.1.3   End items that do not have a specific SRD assigned may use applicable "CXX," "EXX," "FXX," "JXX," "K=," "QXX," and SRD codes until a code has been established for the equipment in accordance with AFI 23-106. WUC tables for the functional component groups will be used in documenting these items.

7-10.1.4   For documenting miscellaneous ground C-E equipment with the first digit "L" of the SRD, the last two digits will be provided by MAJCOM supplements to AFI 21-103.

7-10.2   Documentation for Software Failures: When an equipment item fails to function properly because of a failure of the related software, the software failure will be documented in the CAMS database IAW AFM 66-279 series tables, in the same manner as a hardware component failure. The WUC assigned to the equipment end item will be used along with the proper HMC that relates to the software failure.

7-10.3   Documenting Rules for TCTO Actions: The documenting rules outlined in this chapter usually relate to maintenance actions that affect equipment historical records or the base-level documentation activity as specified in AFI 21-101 and AFI 21-116. Supervisors (assigned labor code 300) performing or assisting in direct labor production will document their actions.

7-10.3.1   When kits, parts, or special tools are required for TCTO accomplishment, documentation activity personnel will follow the rules as specified in AFI 21-101 and AFI 21-116 to order the needed items and prepare documentation after notification from MSL that the items are available. This will contain zero (0) units and HMC "793." The date entry in the stop column will be the Julian date on which the kits, parts, or special tools are received by base supply. The start and stop times should be zeros (0000). The crew size will always be zero (0), and the applicable category of labor code will be entered.

7-10.3.2   When using HMC "796," "797," or "911," entries in the units column will be zero (0) units, the crew size column will be zero (0), and the start and/or stop time will be zeros (0000).

7-10.4   General On-Equipment Documentation Rules for C-E Equipment:

7-10.4.1   TMC Entries: The TMC consists of one alphabetical character and is used to identify the type of work that was accomplished. Special inspections (04 series support general WUCs) and maintenance performed during special inspection will be documented using TMC "S." TMC "T" will only be used for actions directly associated with TCTOs. TMCS/S/LC are listed in the applicable WUC Table, REMIS, and Appendix F to this TO.

7-10.4.2   WUC Entries: The WUC entry identifies either the support general work being performed or the item or component on which the work is being performed. This five-digit code will always relate to the equipment identified by and for which the JCN was issued and the WUC will be obtained from the WUC table and/or table that pertains to that equipment.

7-10.4.2.1   Always use the lowest-level WUC possible when documenting maintenance. When work cannot be related to an individual component, use the WUC of the subsystem that is being worked.

7-10.4.2.2   The listing of a "9" in the fifth position, or "99" in the last two positions of the WUC indicates the reparable item or component on which work was performed is not otherwise coded (NOC). A NOC entry will relate to the subsystem or end item and will be used only when a component of the subsystem or end item is not work-unit coded. An AFTO Form 22 will be submitted when a "99" NOC code is used due to lack of a WUC for a reparable item.

7-10.4.3   ATC Entries: The ATC identifies the action taken on the item identified by the WUC entry. ATCs are listed in the applicable WUC table, REMIS, and in Appendix E. ATCs "A," "B," "C," "D," "M," "N," and "0" through "9" are restricted for use in off-equipment documentation.

7-10.4.3.1   For on-equipment world, ATC "H" will be used only when an operational check reveals that an operator's reported discrepancy does not exist or cannot be duplicated, or when the apparent malfunction of an item is attributed to a failure of associated equipment. If the reported deficiency does not exist or cannot be duplicated, HMC "799" (no defect) will be used rather than the HMC which describes the reported deficiency. HMC "812" (no defect - indicated defect caused by associated equipment malfunction) will be used when the apparent malfunction of an item is attributed to a failure of associated equipment.

7-10.4.3.2   When ATC "G" (repair and/or replacement of minor parts hardware, and soft goods) is used the WUC entry will be that of the affected assembly or most directly related assembly to the parts being repaired or replaced. For example, if a retaining clamp on a work-unit-coded cable was being replaced the WUC of the cable would be used. If the cable was not work-unit coded the WUC would then identify the item to which the cable was connected. When using ATC "G", never use a NOC WUC.

7-10.4.3.3   ATC "Y" (troubleshooting) will be used when the troubleshooting is being reported separately from the repair action. WUC entries will be restricted to the defective system or subsystem that required the troubleshooting. Do not use item and/or component WUCs. When all troubleshooting action has been completed the line entry that is completed to report troubleshooting action will show one (1) unit produced. When ATC "Y" is used the how malfunction code cannot be "799" (no defect).

7-10.4.3.4   For on-equipment maintenance ATC "X" will be used to document operational checks performed following a repair action when the operational check is being reported separately from the repair action. These deferred operational checks will always be reported using the original discrepancy JCN.

7-10.4.4   HMC Entries: The HMC identifies the nature of the defect reported on the system, subsystem, or component identified by the WUC. HMCs are listed in the applicable WUC Tables REMISS and Appendix G to this TO.

7-10.4.4.1   The number of HMC is maintained at a minimum to simplify reporting. The codes do not, therefore, specifically describe all conditions that may be encountered during maintenance. If there is not a specific HMC listed in the WUC table and/or REMIS manual that describes the condition, the code that most nearly identifies the nature of the defect will be used.

7-10.4.4.2   The listing of HMC also contains some no-defect codes to identify certain actions that can occur on items when a failure has not occurred or a defect does not exist, or to report accomplishment of TCTO actions.

7-10.4.4.3   A single HMC will be used to report failure or malfunction of an item. If more than one defect exists on the same work-unit-coded item at the same time, only the most predominant defect will be reported against the item. Other defects will be corrected at the same time, and man-hour expenditures for all work required will be reported on the line entry pertaining to the predominant failure or malfunction. This rule does not apply when defects are discovered on other work-unit-coded items within the same system or subsystem. In these cases, separate line entries will be required to identify each of these defects.

7-10.4.4.4   HMC for highpower tubes and computer or program equipment are grouped separately from other codes only to facilitate their use and permit technicians to find them rapidly. If it can definitely be determined that these codes best describe the nature of the defect for other equipment, these codes may be used.

7-10.4.4.5   HMC "553" (does not meet specification, drawing, or other conformance requirements) will be used to identify improper manufacture or overhaul of components or parts that have been issued from supply stock. This code will not be used in conjunction with the reporting of repair actions on failed items. This code is used only with when discovered code "W" (upon receipt or withdrawal from supply stocks). When HMC "553" and when discovered code "Y" are used, a Category II Deficiency Report (DR) should be submitted under the provisions of TO 00-35D-54.

7-10.4.4.6   HMC "230" (dirty, contaminated, or saturated by foreign materiel) will be used in conjunction with system or subsystem WUCs only when it can be determined this condition exists in the system or subsystem. When it cannot be determined that this condition exists in the system or subsystem, the WUC of the individual item that is dirty, contaminated, or saturated by foreign materiel and HMC "230" will be used.

7-10.4.4.7   HMC "800" (no defect - component removed and/or reinstalled to facilitate other maintenance) will be used whenever a job involves removal and/or reinstallation of a work-unit-coded component to gain access to an item or area. The removal and/or replacement of separately-work-unit-coded access panels or subassemblies that are related to the repair action will be treated as part of the repair action.

7-11   OFF-EQUIPMENT MAINTENANCE DOCUMENTATION FOR SHOPWORK AND TMDE.

7-11.1   Documenting Disposition of Reparable Items: The off-equipment disposition of reparable items removed from weapon systems, support systems, equipment end items, or items withdrawn from supply stocks for in-shop maintenance actions must be documented to provide complete information for the MDD process. Therefore, each repair cycle asset item that is removed from a weapon system, support system, equipment end item, or that is withdrawn from supply stock will be documented by using the applicable ATC to indicate bench check, repair, NRTS, TCTO, or condemnation action, as applicable. This includes items that are normally reparable but are damaged to the extent that NRTS or condemnation action will obviously be taken, and items for which base-level repair is not authorized (NRTS code 1). In all cases, the field entry that reflects the applicable ATC must be completed for input to the MDD process at the time the PART II of the AFTO Form 350 is completed and the item is processed to the supply activity (TO 00-20-3).

7-11.2   Shop Processing of Subassemblies: The removal and replacement of subassemblies or reparable parts that require separate shop processing requires documenting a separate AFTO Form 350 for each subassembly or reparable part removed from the assembly or component being repaired. However, if the items are processed together and have the same JCN, WUC, FSC, and part number, a single AFTO Form 350 may be used with a quantity of more than one entered in block 9.

7-11.2.1   The removal and replacement of the subassembly or part from the complete assembly will be reported against the WUC of the part or subassembly. When the replacement of parts is recorded, the AFTO Form 350 tag number that was attached to the assembly or component when it was received in the shop will be documented to reflect the repair action on the item.

7-11.3   Subassembly Repair Actions: When an assembly that contains reparable subassemblies or parts is made serviceable by repairing a recoverable (XD or XF) subassembly without removing it from the assembly, the repair cycle data for both the assembly and the subassembly are essential. This information is necessary to provide repair cycle data to the supply system for both the assembly and the reparable subassembly. This information is used to determine stock-level requirements for both items. To accurately reflect this information, the following documenting rules will be used.

7-11.3.1   If the assembly is repaired by the removal and replacement of the reparable subassembly, the subassembly will require an AFTO Form 350 for use in documenting the subsequent repair action as prescribed in paragraph 7-11.3 above. The data field entry is completed to record the repair action for the assembly and will be used to document the removal and replacement of the reparable subassembly.

7-11.3.2   If the assembly is made serviceable by repairing a recoverable (XD or XF) subassembly without removing it from the assembly or by the removal, repair, and reinstallation of the subassembly; two AFTO Forms 350 must be provided to the supply activity through the reparable processing activity. One AFTO Form 350 for the assembly and one for the subassembly is required. Shop personnel will initiate PART II of an AFTO Form 350 for each recoverable (XD or XF) subassembly that is repaired. They will complete blocks 17, 18, 19, 20, and 21 on PART II of these AFTO Forms 350. PART I will remain with the removed subassembly to provide identification and association with its major assembly. This will be accomplished by entering the same supply document number in block 13 of the AFTO Form 350 for both the major assembly and any removed subassemblies. PART I may be destroyed upon reinstallation. PART II of the AFTO Form 350 for the subassemblies will be completed and forwarded to the production scheduler. The production scheduler will forward the AFTO Form 350, PART II for the subassembly with the PART II for the assembly to base supply for input of repair cycle information to the supply system. The PART II for the subassembly will not contain a document number entry since no demand was made for a subassembly, and the action will be processed as a "no demand" transaction as described in AFI 21-101 and TO 00-20-3. The data field entries completed by the shop personnel to record the repair of the assembly will include entries in block 29 for the subassemblies that were repaired in addition to the data for the parts replaced during the repair of the subassemblies.

7-11.4   Maintenance Processing: An AFTO Form 350 will be initiated for all reparable items that are removed from equipment end items for shop processing. This includes items that are removed for in-shop inspection or repair action when no demand has been made on the supply systems. The removed item will be processed through the production scheduling activity as prescribed by AFI 21-101 and TO 00-20-3. The attached AFTO Form 350 will be processed using normal procedures with the exception of the supply document number entries. If the item is serviceable, a status entry will be made in block 15 of the AFTO Form 350 by the shop personnel and the item returned for reinstallation. In this case, the production

scheduler will destroy PART II of the AFTO Form 350 if the item did not require repair action. If the item required repair in the shop or was determined to be NRTS or condemned, the PART II of the AFTO Form 350 will be updated to reflect the shop action and forwarded to base supply for input of repair cycle data into the supply system. This provides data for the Repaired This Station (RTS), NRTS, and condemnation actions that are used in base stock-level computations for the item. PART I of the AFTO Form 350 will be removed from the item and destroyed at the time of installation. When items are processed through the shops for inspection and/or repair and returned for reinstallation, the DO Forms prescribed for use as condition status tags and labels are not required.

7-11.5   Documenting Rules for COMSEC and Cryptologic Equipment: When COMSEC and cryptologic end items are shop processed, the work performed will be documented as on-equipment maintenance in accordance with paragraph 7-7. All work performed on assemblies' subassemblies, and components removed from COMSEC and cryptologic equipment will be documented as normal off-equipment maintenance.

7-11.5.1   Off-equipment maintenance documentation for COMSEC and cryptologic equipment must use locally assigned ID numbers. If there is no ID number assigned, the SRD of the equipment end item will be used.

7-11.5.2   The WUC and SRD must be obtained from the appropriate AFKAM-504( ). The aircraft WUC table will not be used. This does not prevent use of codes in the aircraft WUC table or use of the aircraft ID number for the purpose of documenting removals and/or installations on the aircraft or for the Equipment Status Reporting (ESR) system.

7-12   MISCELLANEOUS MDD ACTIONS.

7-12.1   Shop Documenting of Maintenance for Non-USAF Aircraft: In addition to standard documentation requirements for transient USAF aircraft, maintenance actions for removed components and oil analysis concerning non-USAF transient aircraft will be documented. Standard off-equipment documentation requirements apply, except that SRD "AHX" will be used.

NOTE

Refer to chapter 9 for general instructions for documentation.

7-12.2   Accessories Involved in Accidents: Items will not be removed from a weapon system, support system, or equipment involved in a mishap until investigation personnel authorize such removals. Reuse of parts or accessories from wrecked or damaged aerospace vehicles or equipment requires extreme caution. Using the appropriate TOs, thorough testing and/or inspection of items that may have been damaged will be conducted before they are used. Although the external appearance may indicate that the item was not damaged, hidden flaws may exist due to stress, strain, or other forces that can only be detected by testing and inspection. Items routed for test and/or inspection will include notation on the AFTO Form 350 that the item was removed from a wrecked or damaged weapon system, support system or equipment. In the absence of appropriate TOs the SPM and/or IM will be contacted through the major command for guidance.

7-12.3   Life Limited Components: The CAMS Component History Printout (EHRAC) will be attached to the DD Form 1577-2 or DD Form 1574, SERVICEABLE TAG - MATERIEL, when an engine life limited component is turned into supply. When aircraft are deployed to a base that does not have CAMS capability, life limited components may be returned to the depot or contractor without the EHRAC printout information. The repair facility will request the latest data from the prime IM division and/or central data bank. This data will be recorded on the back side of the DD Form 1574 so that the receiving unit can upload the CAMS and G081 history file. Additional information can be found in TO 00-20-5-1.

7-12.4   Nondestructive Inspections Documentation (NID): Separate data entries will be used to document nondestructive inspections. The when discovered codes for each type of NID can be found in the WUC tables and this TO. The NID when discovered codes assigned when the discrepancy was discovered will be used for follow on repair actions.

7-12.5   MDD Equipment Scheduling: Implementation and use of the calendar Preventive Maintenance Inspection (PMI) program is at the option of the deputy or chief of maintenance. Use of this MDD system for PMI items is mandatory as outlined in this TO. If the system is implemented and used for other

equipment items, implementation of the master schedules will be in accordance with applicable AF directives. The mechanized PML scheduling rules for bases supported by Standard Base Level Computer (SBLC) are outlined in this paragraph.

7-12.5.1   Discrepancies discovered during the inspection that require maintenance repair actions will be documented separately if a unique JCN is required as outlined in table 4-1 of this TO.

7-12.5.2   Grouping and reporting like inspections on like equipment by personnel of the same workcenter is authorized. This is accomplished by reporting the number of inspections completed (units) on a single entry. When this procedure is used, the ID number and/or serial number of one of the items completed will be used. For control purposes each serial number in the group may be entered. If units are utilizing the event connected MDD procedures, the guidelines in chapter 4 of this TO apply.

7-12.6   When documenting functional checks, maintenance, or processing for compliance with shelf-life inspection requirements for items withdrawn from supply, use WUC "ZZ990," ATC "X," WDC "Y," HMC "799," TMC "A," and SRD "RSA,".

7-12.7   After returning to home station, it's the crew chiefs responsibility to notify Plans and Scheduling that a serial controlled or time-change component was changed while off station. Plans and Scheduling is responsible to update the serial or time-change components in CAMS using the appropriate CAMS transactions.

7-12.8   Part Number: This will never be left blank for shop work and will normally contain the part number of the item(s) being processed. Special care must be given to part number recording because omission or improper positioning of required dashes or slashes, improper inclusion of dashes or slashes when not applicable, incorrect recording of digits and omissions of assigned modification dash numbers causes an unwarranted shred out of data for like items in AFMC products. Exceptions to part number reporting and specific instructions for entries required in this block are as follows:

7-12.9   For mechanical, electrical, hydraulic, and other items that fall in this general category, the first preference for the block 20 entry is the manufacturer's part number for the component or complete assembly as it appears on the data plate, or as stamped, cast or etched on the component or assembly. If the part number is not marked on the component or assembly, the part number will be obtained from the parts data log. If the item does not have a data plate, the part number will be obtained from the parts catalog. Recording of the part number will include all dashes and slashes as they appear on the item or in the parts catalog. Periodic checks of the identification will be made to assure that the part number and FSC, if included, are correct to assure maximum accuracy in part number reporting.

7-12.10   If a complete assembly consists of subassemblies which have separate data plates, or other separate identification, the block 20 entry will be the part number for the complete assembly as indicated on the complete assembly or from the part catalog.

7-12.11   For items that do not have a part number, the NIIN number (last nine digits of the NSNs), including the dashes as indicated, will be used for the block 20 entry.

7-12.12   For local manufacture of items that are Not Stock Listed (NSL), enter NSL.

7-12.13   For C-E equipment, the type designator as it appears on the data plate excluding the AN prefix (e.g., HD-450/FPN16 or PP-992/FSA-4) is the first preference. The second preference is the part number, and the NIIN is the last preference. For airborne electronic equipment, the part number is the first preference and the type designator is the second preference for the block 20 entry.

NOTE

The type designator of the item being worked on is entered in block 20. Do not use the end item or assembly code in block 20 when working on a specific item of an end item or assembly.

7-12.14   For aircraft tires, enter the NIIN since tires do not have part numbers assigned. TO 4T-1-4 contains the correct NIIN for tires.

7-12.15   For aircraft wheels, the manufacturer's assembly part number will always be used and is identified on the data plate as "ASSEMBLY NUMBER." The data for this entry will be obtained from the inboard wheel half. The inboard wheel half is defined as that wheel half away from the axle nut.

7-12.16   For conventional munition commodity items (e.g., ammunition, bombs, signals and/or flares, rockets, aiming wires, Cluster Bomb Unit (CBU) components, grenades, or mines), block 20 will contain the part number of the item as it is listed in TO 11A-1-06. For explosive egress and jettison devices, block 20 will contain the part number of the item as is listed in the applicable weapon system WUC table. For conventional missile munition items (e.g., propulsion units, igniters, warheads, fuses, squibs, or primers), block 20 will contain the part number of the item as is listed in the applicable missile WUC book. As an aid for these reporting requirements, forthcoming revisions to the Munition Code Table (TO 11-A-1-06), and the weapon system - 06 WUC tables will contain part numbers with munition item nomenclature. This will eliminate research for munition item part number identity on munition items that do not have a data plate or part number stamped on them.

7-12.17   For standard family, rigid wall, tactical shelters, enter the designator of the shelter as it appears on the data plate excluding the AN prefix. For example: (S-521/TPN-25).

7-12.18   Documenting Disposition of Reparable Items: The off-equipment disposition of reparable items removed from weapon systems, support systems, equipment end items or items withdrawn from supply stocks for in-shop maintenance actions must be reported in a maintenance record to provide complete information for the MDD system. Therefore, each repair cycle asset item that is removed from a weapon system, support system, equipment end item, or that is withdrawn from supply stock will be reported in a maintenance record using the applicable ATC to indicate bench check, repair, NRTS, TCTO, or condemnation action, as applicable. This includes items that are normally reparable but are damaged to the extent that NRTS or condemnation action will obviously be taken, and items for which base-level repair is not authorized (NRTS code 1). In all cases, a maintenance record that reflects the applicable ATC must be completed for input to the MDD system at the time the record is completed and the item is processed to the supply activity (TO 00-20-3).

CHAPTER 8

AFTO FORM 350 ENTRIES

8-1   GENERAL.

The AFTO Form 350 is a two part form required on items removed for maintenance shop processing. These items include removed engines, removed end items, components removed from end items, and subassemblies removed from assemblies. A completed AFTO Form 350 serves to identify the origin of an item and contains key data elements needed to document shop actions. PART 1 of the form is the repair cycle processing tag. PART II serves as the production scheduling document. Additional rules regarding the use of this form for production scheduling and control of items are contained in TO 00-20-3 and AFMAN 23-110. All workcenters that repair XD2 components that are then returned to service (Action Taken codes A, F, G, K, L, or Z) need to ensure that the procedures in TO 00-20-3 governing TRNs are followed. The maintenance JCN must be documented on the AFTO 350 prior to any maintenance action.

8-2   CONDITION STATUS TAGS.

In addition to the requirement for the use of AFTO Form 350 for maintenance processing of items that require off-equipment or shop action, DD Forms are required to indicate the condition status of items that are processed to supply activities for return to serviceable stock, for forwarding to off-base repair activities, or for other disposition action.

8-2.1   For all items returned to supply, the maintenance activity responsible for condition status determination will prepare the applicable DD Forms that are used as tags and labels to identify item condition (TO 00-20-3). Any item being returned to supply as a serviceable item will have the DD Form 1574 or DD Form 1574-1, SERVICEABLE LABEL - MATERIEL, annotated in the remarks block to reflect any TCTO that was performed to make the item serviceable. This will be accomplished by both depot and field activities. These forms are:

1. DD FORM 1574.
2. DD FORM 1574-1.
3. DD FORM 1575, SUSPENDED TAG - MATERIEL.
4. DD FORM 1575-1, SUSPENDED LABEL - MATERIEL.
5. DD FORM 1576, TEST/MODIFICATION TAG - MATERIEL.
6. DD FORM 1576-1, TEST/MODIFICATION LABEL - MATERIEL.
7. DD FORM 1577, UNSERVICEABLE (CONDEMNED) TAG - MATERIEL.
8. DD FORM 1577-1, UNSERVICEABLE (CONDEMNED) LABEL - MATERIEL.
9. DD FORM 1577-2.
10. DD FORM 1577-3.

8-2.2   Unpacked items that are returned to the reparable processing activity after shop repair, NRTS, or condemnation action will have the applicable condition status tag or label attached to the item.

8-2.3   Part I of the AFTO Form 350 will always be left attached to items that are determined to be reparable and are being forwarded to other activities for repair. When reparable items are packaged by the shop, a DD Form 1577-2 or DD Form 1577-3 will be prepared and attached to the item in addition to the AFTO Form 350. The package or container will be labeled with a DD Form 1577-2 or 1577-3.

8-2.4   For serviceable and condemned items, Part I of the AFTO Form 350 will be removed from the item after shop processing of the item and Part II of the form will be updated for forwarding to supply.

NOTE

> Part II processing is not required for CAMS users. When the shop packages serviceable or condemned items, the AFTO Form 350 will be removed from the item before packaging. The packaging or container will be labeled with a DD Form 1574-1 or 1577-1, as applicable. The removed AFTO Form 350 will be forwarded with the item to the reparable processing activity.

8-2.5   For removed munitions or explosive type items, the applicable condition status tags or labels will be prepared by the munitions activity that is responsible for this determination. In this case, AFTO Form 350 may be used to indicate the reason for removal until the status of the item is determined by the munitions activity or the munitions supply activity. Condition status tags are required as specified in AFMAN 23-110.

8-3   FRONT SIDE, PART I.

Blocks 1 through 14 and 15A will be completed by the individual initiating the form. Entries for blocks 1 through 12, 14, and 15A will be completed at the time of the removal action. The supply document number (block 13) will be obtained from the supply activity when a demand is made for a replacement item. Block entries are as follows:

8-3.1   BLOCK 1, JCN: Enter the JCN, as documented in the CAMS/G081-maintenance data record which reflect the JCN for the applicable reparable item. If more than one reparable component requiring an AFTO Form 350 is removed under the same JCN, each AFTO Form 350 that is initiated will have the same JCN entered in block 1.

8-3.2   BLOCK 2, SERIAL NO: Enter the serial number of the end item or weapon system.

8-3.3   BLOCK 3, TM: Enter the type maintenance code.

8-3.4   BLOCK 3A, SRD: Enter the SRD or the applicable code obtained from the REMIS SRD table in CAMS and REMIS. For AFTO Forms 350 prepared for engine items, enter the applicable engine SRD.

8-3.5   BLOCK 4, WHEN DISC: Enter the when discovered code.

8-3.6   BLOCK 5, HOW MALFUNCTION: Enter the how malfunctioned code.

8-3.7   BLOCK 6, MDS: Enter the MDS, JETD, or end item WUC.

8-3.8   BLOCK 7, WUC: Enter the WUC of the item to which the form is to be attached. If the item is a reparable subassembly which does not have a WUC, enter the WUC of the assembly from which the item (subassembly) was removed.

8-3.9   BLOCK 8, ITEM OPERATING TIME: If the item is a tracked item in the WUC table for which time records are maintained, enter the calendar time or accrued operating time of the item. Calendar time will be entered to the nearest whole month and operating time will be entered to the nearest whole hour. For recoverable engine items listed in TO 2R-1-16 and TO 2J-1-24, the accrued time will be computed from the AFTO Form 781E. For recoverable subassemblies under the RIW program enter the ETI reading, if available, of the assembly.

8-3.10   BLOCK 9, QTY: Enter the number of like items being forwarded for shop processing.

NOTE

> The AFTO Form 350 prepared for components may have a quantity of more than one only if the JCN, WUC, FSC, and part number are the same and the components can be packaged or transported together for shop processing. Items identified by a tracked indicator in the WUC table require an individual AFTO Form 350.

8-3.11   BLOCK 10 FSC: Enter the FSC, code (first four) of the removed item.

8-3.12   BLOCK 11, PART NUMBER: Enter the part number of the removed item, including dashes and slashes. First preference is the part number or complete identification as it appears on the data plate. For items that do not have a part number, enter the NIIN, including the dashes. The NIIN is the last nine characters of the NSN. For ground C-E equipment, enter the component type designator as it appears on the data plate, excluding the AN prefix. For conventional munition items, enter the part

number of the item as it is listed in the applicable WUC table. For aircraft tires, enter the NIIN since aircraft tires do not have part numbers assigned. TO 4T-1-6 contains the correct NIIN for tires.

8-3.13   BLOCK 12, SERIAL NUMBER: For time-change, RIW, serially-controlled items, and warranty tracked items identified by T. W. and S in the WUC table, enter the serial number of the removed item. If the serial number exceeds 10 characters, enter only the last 10 characters.

8-3.14   BLOCK 13, SUPPLY DOCUMENT NUMBER: When a demand has been placed on the supply system, enter the supply document number for the replacement item.

8-3.15   BLOCK 14, DISCREPANCY: Enter a brief but specific description of the malfunction that caused the removal or the reason for removal. If the item was removed for off-equipment TCTO compliance, enter the TCTO number.

8-3.15.1   For electronic items that have sequential test procedures, also enter the TO reference step, and sequence number where the item failed to pass the test. If the item is processed on ATE, enter the test failure message.

8-3.15.2   For FSC 1377, (escape system devices only) and for warranty items, also enter the date of installation and the date of removal. The installation date of the item will be obtained from the applicable equipment document.

8-3.15.3   For items removed from equipment involved in accidents, enter the words "INVOLVED IN ACCIDENT."

8-3.15.4   Place the GEOLOC of the base originating the AFTO Form 350, in the lower right corner of this block.

8-3.16   BLOCK 15, SHOP USE ONLY: If the item was made serviceable, enter a brief description of the work accomplished. An entry will not be made if the entry would reveal classified information. When shelf-life inspection requirements are accomplished, include in the description the applicable TO number, TO date, the last inspection due date, and the inspecting activity identification. The date that is entered in block 26 when the item is made serviceable will establish the due date of the next inspection. When a warranty item that is identified by a warranty sticker, decal, stencil, or tag is determined to be unserviceable, the following entries will be made in this block: "Warranty item - Warranty expires Contract number Accumulated operating hours and/or time" (as applicable). This information is not required for RIW items, however, if the NRTS item is a subassembly, enter the serial number of the assembly. Applicable entries will be made to complete the information for the item. If the warranty period has expired, the warranty entries are not required. If the item is determined to be NRTS, print or stamp "NRTS" along with the applicable NRTS code in this block. If NRTS code "D" is used, give the authority for this determination. Additionally, when an item is determined to be NRTS or ATC "1" is used as a result of a functional test or bench check prescribed by the TO repair instructions, the TO number and a reference to the test failed will be entered along with a brief description of the discrepancy, if applicable. This information will permit the specialized repair activity or agency making the repair to verify the failure condition and to accomplish the repair without excessive troubleshooting or diagnostic time being expended.

8-3.17   BLOCK 15A, CMD/ACT ID: If no ID number is entered in block 2, for cryptologic equipment removed from an aircraft for shop processing, enter the owning command code (two position).

8-3.18   BLOCK 15B, SHOP ACTION TAKEN: The shop technician will enter the final ATC in block 15B prior to returning the item to the scheduler when the work is completed, or when the item is declared NRTS or condemned.

8-4   FRONT SIDE, PART II.

This part will be completed by the production scheduler, detached, and retained as a suspense document until the item is returned from the shop or is made serviceable. When an item is not sent to the reparable processing activity because of size or other reasons, blocks 16, 17, and 18 will be completed by the originator and PART II will be detached and forwarded to the production scheduler. Block entries are as follows.

8-4.1   BLOCK 16, SUPPLY DOCUMENT NUMBER: Enter the supply document number from block 13 of PART I.

8-4.2   BLOCK 17 NOMENCLATURE: Enter the nomenclature of the item.

8-4.3 BLOCK 18, PART NUMBER: Enter the identification of the item from block 11 of PART I.

8-4.4 BLOCK 18A, WUC: Enter the WUC of the item when the item is declared NRTS or condemned (ATCs 0 through 9).

8-4.5 BLOCK 19, NSN: Enter the NSN of the item.

8-4.6 BLOCK 20, ACTION TAKEN: Transcribe the ATC from block 15B of the AFTO Form 350, PART I, that is forwarded with the item when the work is completed or when the item is declared NRTS or condemned.

8-4.7 BLOCK 21, QTY: Enter the quantity from block 9 of PART I.

8-4.8 BLOCK 22, Reparable Processing Center (RPC) USE ONLY: This block may be used as necessary by the RPC.

8-5 REVERSE SIDE, PART I.

Entries on this portion of the form are made by the RPC, base supply or by the activity responsible for determining the status of the equipment, as applicable. Entries are made as follows.

8-5.1 BLOCK 23, NSN: Enter the NSN of the item. This block will be completed by the supply activity.

8-5.2 BLOCK 24, STOCK RECORD ACCOUNT NUMBER (SRAN) CODE: When a NRTS determination is made, the base SRAN code will be entered in this block. This entry will be completed by the shop or the reparable processing activity.

NOTE

> Every NRTS item (0 through 8 or D) must have a completed AFTO Form 350 attached. The minimum blocks that must be completed are 1, 2, 3, 3A, 4, 6, 7, 8 (if applicable), 9, 10, 11, 12, 14, 15, 23, and 24. Completing these blocks will enable the depot to contact the submitting base or activity to resolve any Can Not Duplicate (CND) or Retested OK (RTOK) problems encountered by the repair facility.

8-5.3 BLOCK 25, TRANSPORTATION CONTROL NUMBER (TCN): This block is for supply use only.

8-5.4 BLOCK 26, SERVICEABLE: This block will be completed by the activity responsible for returning the item to a serviceable status. An entry is not required if a DD Form 1574 is initiated and attached to the item at the time the item is made serviceable and it is to be returned to supply. When an entry is required, an inspection stamp in accordance with TO 00-20-3 or a signature and date is acceptable.

8-5.5 BLOCK 27, CONDEMNED: An entry is not required. The item will be tagged with either the DD Form 1577 or the DD Form 1577-1, in accordance with the instructions in TO 00-20-3 by the activity responsible for determining the condition of the item.

8-5.6 BLOCK 28 SUPPLY INSPECTOR'S STAMP: This block is for supply use only.

8-6 REVERSE SIDE, PART II.

The initiator of the AFTO Form 350 is responsible for entering the date the item was removed. The production scheduler is responsible for completing the remainder of the block.

8-7 MARKING OF CLASSIFIED COMPONENTS.

Marking of classified documents should be done in accordance with AFKAG-1 or AFI 10-1101.

8-8 AUTOMATED AFTO FORM 350.

Automated AFTO Forms 350 are authorized for use when produced by the automated MDD systems. Additional MDD data elements and discrepancy narratives may be included when such information may be helpful to the next repair activity. Equivalent AFTO Form 350 data may be used when shipping items to depot for repair. An example of equivalent would be a screen print of screen 122 in CAMS.

CHAPTER 9

TCTO STATUS REPORTING

9-1 PURPOSE.

The purpose of this chapter is to:

- Prescribe the table procedures for documenting TCTO status information when a mechanized system isn't available.

- Identify how to obtain TCTO reports.

- Prescribe validation procedures for TCTO status reports by commands and units using the mechanized systems.

9-2 SCOPE.

This chapter applies to all USAF organizations performing equipment maintenance (AFPD 21). Experimental weapon and support systems having an "X" designation are exempt from this TO. Also, the provisions of this TO are waived for operational equipment used for training, provided it is certain the equipment will not be returned to operational inventory and an AFTO Form 95 is not maintained for the equipment.

9-2.1 Modification of training equipment and equipment temporarily removed from the operational inventory for training purposes are documented as specified under this TO. The TCTO status of all other equipment, including items in storage, are documented under either the automated or table reporting system as prescribed in this TO.

9-2.2 The reporting methods for the base-level automated systems are prescribed in the system users manual. Units on isolated sites can be relieved from the provisions of automated systems, and permitted to use the manual reporting and documentation system prescribed in this TO. Major commands should ask for waivers from HQ USAF/ILMM citing this paragraph, with an information copy to HQ AFMC/ENB.

9-3 STATUS ACCOUNTING SYSTEMS.

TCTO status accounting systems are set up to meet Air Force status accounting needs. These systems use data stemming from the maintenance data documentation (MDD) system to provide a central data bank on the TCTO status of equipment. Reports are prepared from this data for use by base-level managers, AFMC system program directors (SPDs), product group managers (PGMs), material group managers (MGMs), and item managers (IMs) when prescribed in this TO. Status accounting reports are also used by HQ USAF, HQ AFMC, and major commands as a management aid. The TCTO status systems are:

9-3.1 REMIS. Maintains THE UNCLASSIFIED TCTO master records, and compliance records for Aero Space equipment except intercontinental ballistic missiles.

9-3.2 EMDAS. Maintains TCTO records for intercontinental ballistic missiles.

9-3.3 CEMS. Maintains records for engines.

9-3.4 EXEMPTIONS. All exemptions must be approved by the Maintenance Management Information Systems Steering Group or HQ USAF/ILMM.

9-4 DOCUMENTATION OF TCTO KIT PROOF TESTING.

Documentation of TCTO kit proof testing is the same as for standard TCTOs (TO 00-5-15). When an updated TCTO is accomplished with the proof testing of a modification, the modification is recorded as prescribed in this TO.

9-5 SECURITY ASSISTANCE PROGRAM (SAP) TCTO REPORTING.

Reporting of TCTOs by SAP countries to AFMC can be accomplished when considered essential to support such countries, and when this requirement is included in the country-to-country agreement. Reporting

procedures using the AFTO Form 349 should be under the applicable chapters of this TO and/or under reports outlined in this TO. Data element and formats must be provided to the country by the SPD with adequate instructions for producing input to meet REMIS reporting requirements. As an alternative, the SPD can negotiate an agreement to use the AFTO Form 349 provided by the country and keep manual records, or to update machine reports manually. If TCTO status information is submitted to the central REMIS data bank, the SAP country should use a command code and base codes that are assigned to the country and the reporting bases prior to data submission, in order to permit separation of country TCTO data from USAF data and for the preparation of separate reports.

9-6   TRANSFERRING EQUIPMENT.

When a weapon system or equipment item is transferred, the historical documents containing the TCTO status are forwarded with the weapon system or equipment under TO 00-20-1. If the transfer is between activities that are interfaced to the master TCTO records in REMIS, a manual transfer of records is not required. If the transfer is outside these automated systems, a manual transfer such as an AFTO Form 95, printout, or digital data transfer is acceptable.

9-7   ERROR CORRECTION.

The TCTO information provided via the MDD system is used in the management decision making process with results in better logistics support, especially to maintenance. Because of the many support decisions made from this information, it's essential data submitted be both accurate and complete. TCTO status inputs demand 100 percent accuracy and completeness to gain full visibility for management decisions. Consequently, erroneous or incomplete TCTO data submitted through automated or manual methods must be corrected as outlined in this technical order.

9-8   ADMINISTRATIVE TCTO SUPPLEMENTS.

When a supplement to a basic TCTO is issued to correct administrative problems, the supplement is not entered into the TCTO management system. This case pertains to those supplements not authorizing additional work to accomplish the TCTO's intent. Consequently, don't report TCTO compliance on administrative TCTO supplements.

9-9   MANUAL REPORTING.

The AFTO Form 95 is used to document TCTO status when a automated system is not available or used. TCTO status and other historical information entered on the AFTO Form 95 is used to identify the equipment's TCTO, to plan required follow-on maintenance, determine materiel support needs, and to alert maintenance planning personnel to conditions which demand management attention.

9-10   APPLICABILITY.

When automated systems are not used, personnel will record TCTO status on the AFTO Form 95 for aircraft, missiles, drones, engines, training equipment, communications-electronic (C-E) equipment, and support equipment. If automated reports are used, they serve as the TCTO historical document for the equipment and are updated as prescribed in MDD system users manuals and the applicable chapter of this TO. Entries regarding TCTO status are not required on an AFTO Form 95 for those TCTOs included in an automated report.

9-10.1   For C-E equipment, TCTO status is maintained on each system or set for which a TCTO is written. This can include major subsystems and operating assembly (OA) groups. For large complex radar and communication systems involving many components which are modified, a separate form is started for each major subsystem or QA group. For smaller equipment end items or sets, the AFTO Form 95 is maintained for the end item or set. (For applicability policies concerning equipment in storage at the USAF Cryptologic Depot, see TO 00-20-5).

9-10.2   When an automated report does not contain TCTO status information on subassemblies or components affected by TCTO accomplishment on a higher assembly, the chief of maintenance can record the TCTO status of these components on an AFTO Form 95.

9-11   PROCEDURES FOR RECORDING AND DETERMINING TCTO COMPLIANCE.

9-11.1   External marking instructions under existing military specifications and directives require TCTOs for commodity equipment to contain instructions for the external item marking when a TCTO compliance is not apparent from visual inspection. This procedure was set up to eliminate the need for initiating and

maintaining AFTO Form 95 TCTO documentation on commodity items subject to infrequent modification. When TCTOs are received without the needed marking instructions, or when existing TCTOs do not contain marking instructions, the issuing agency is contacted to obtain the external marking instructions. This applies when either manual or automated information systems are used for reporting.

9-11.2   Configuration changes require at least two entries on the AFTO Form 95 when either form is used as a status document. An entry is made at the time of TCTO receipt and another entry is made to indicate TCTO compliance. When parts of TCTO kits are needed, an additional entry is made to indicate their receipt.

9-11.3   TCTOs which direct a non-TCTO action also require two entries on the applicable AFTO Form 95 when either form is used as a status document. An entry made at the time of TCTO receipt and another entry made to indicate compliance.

9-11.4   Immediately upon receipt of an immediate action, urgent action, or routine action TCTO, documentation activity personnel make sure appropriate entries are made on the applicable forms or automated information system. All TCTO supplements needing additional work are entered separately. Those supplements not needing additional work do not need a form entry. For a TCTO which pertains to an assigned weapon system or equipment item, but does not specify the equipment serial numbers involved, the documentation supervisor ensures a proper entry is made on the applicable AFTO Form 95 information system, for the equipment affected. If inspection reveals this entry is not applicable, appropriate entries are made. The TCTO documentation is accomplished under this TO. Temporary modifications, whether for a mission or specific test program, will be appropriately documented in the equipment status forms (AFTO 781-series or 244-series) and appropriate historical records (AFTO Form 95).   Annotation will be in the active portion (the AFTO Form 781A for instance) of the records. The temporary modification annotation will remain there and active until the equipment is returned to the original configuration.

9-11.4.1   Permanent modifications which are not accounted for in mechanized TCTO reporting systems are recorded on the AFTO Form 95 in the same manner as TCTOs.

9-11.4.2   Base-level personnel are not obligated to make entries on the AFTO Form 95 for TCTOs specifying depot-level work. Depot-level TCTOs which have been complied with and are not documented on the AFTO Form 95 can be entered on this form by base-level personnel who are able to validate compliance action. Depot-level TCTOs which previously have been entered, but not complied with, need not be lined out. Such entries are closed out by the depot-level personnel when compliance is designated as part of a depot-level work package.

9-11.4.3   To furnish a means of flagging the type of TCTO listed on an AFTO Form 95, the following codes are used; immediate action "I," urgent action "U," routine action "R," and safety "S." The appropriate code letters are entered on the AFTO Form 95 following the title of each individual TCTO listed in column B. REMARKS.

9-11.4.4   The required TCTO information is normally entered on the AFTO Form 95 in the sequence in which the TCTOs are received. Base-level activities can establish local sequencing procedures if needed.

9-11.4.5   AFTO Form 95 entry instructions are found in T.O. 00-20-5 Series T.O.s.

9-12   AFTO FORM 95 TCTO ENTRIES.

9-12.1   PAGE OF PAGES: Enter the page number and number of pages.

9-12.2   BLOCK 1, MISSION DESIGN SERIES/TYPE MODEL AND SERIES: Enter applicable data. Enter the term "QEC" for quick-engine change kits.

9-12.3   BLOCK 2, MANUFACTURER: Enter the name of the equipment's manufacturer.

9-12.4   BLOCK 3, SERIAL NUMBER: Enter the serial number or registration number of the item identified in block 1.

9-12.5   BLOCK 4, ACCEPTANCE DATE: Enter the date the equipment was accepted by the Air Force. If unknown, enter "unknown."

9-12.6   COLUMN A, DATE: Record the date of the entry.

9-12.7   COLUMN B, REMARKS: Enter the TCTO number and date, short title, type TCTO code letter, and TCTO data code number. When the AFTO Form 349 identifies the TCTO is complied with, enter "COO" and the compliance date. If the title to a modification for cryptologic equipment is not classified, it is entered in this column. If the title is classified, enter a remark to indicate the title is classified and to see the instructions for identification. (Example: Title is classified, see KAB-150A for identification).

9-12.8   COLUMN C, ORGANIZATION: Enter the designation of the organization accomplishing the TCTO.

9-13   MAINTAINING TCTO ENTRIES.

9-13.1   Upon receipt of a non-administrative TCTO which changes or replaces an existing TCTO, the following actions are taken and appropriate entries made on the AFTO Form 95 or AFTO Form 253 regardless of whether the TCTO being changed or replaced has or has not been complied with.

9-13.1.1   Compare the TCTO replaced with the new TCTO to determine if additional work is needed.

9-13.1.2   If the new TCTO needs no additional work, line out the changed portions of the TCTO entry on the AFTO Form 95 or AFMC Form 253, and enter the new TCTO number and date on a new line entry. If the replaced TCTO has been previously complied with, an entry for the new TCTO is made in column B to show compliance. When a replaced TCTO has not been previously complied with, an entry is made in columns B and C to identify the new TCTO workload.

9-13.1.3   If additional work is required by the new TCTO, line out the replaced TCTO and enter the new TCTO number and date, short title, type TCTO code letter, and data code on the next open line.

9-13.2   When a TCTO which has not been complied with is rescinded, line out the entry and enter (RESC) rescinded and the recession date. Contact the SM, or IM for directions in accordance with TO 00-5-15 and add a line entry with the manager's name, the date, and instructions to either comply with the TCTO or disposition instructions.

9-13.3   When an entry was made for a TCTO which is not applicable to the weapon system or equipment, line out the entry and enter "NA" (not applicable) followed by the date of this determination.

9-13.4   When a TCTO has been previously complied with but not signed off, enter "PCW" (previously complied with) followed by the date of this determination.

9-13.5   When a TCTO was entered in duplicate, line out the entry and enter the word "Duplicate" followed by the date of this determination.

9-13.6   Upon receipt of an interim TCTO specifying accomplishment and needing an entry on the AFTO Form 95 or AFTO Form 253, the procedures for TCTO entries in this chapter are applied. Application of these procedures typically eliminates any need for additional entries when the TCTO is received.

9-13.7   When a TCTO was decomplied with, line out the entry recording original TCTO compliance. Then enter "decompliance" above the line out, along with the date of decompliance, and the decomplying activity.

9-13.8   Those entries for engineering change proposals which were incorporated into the equipment during production are lined out.

9-14   TCTO STATUS REPORTS.

9-14.1   TCTO status reports may be obtained on-line from the information systems listed in paragraph 9-3.

9-15   ANNUAL TCTO STATUS REVIEW.

9-15.1   All units possessing a weapon system will obtain a status list from one of the automated systems listed in paragraph 9-3 and reconcile it against records maintained at base level. Discrepancies should be forwarded to the Single Manager - TCTO monitor for correction in the central database. Engine TCTOs are reviewed quarterly, IAW TO 00-25-254-1.

CHAPTER 10

AFMC ACTIONS IN SUPPORT OF MDD

10-1 GENERAL.

This chapter provides guidance for establishing an maintaining work unit code tables in the Reliability and Maintainability Information System (REMIS), establishes Time-Compliance Technical Order (TCTO) responsibilities, and assigns responsibilities to the Air Logistics Centers (ALCs), System Program Director (SPD), Program Group Manager (PGM), Material Group Manager (MGM), and Aerospace Guidance and Metrology Center (AGMC) for collecting and reporting depot maintenance data.

10-2 SINGLE MANAGER RESPONSIBILITIES.

The overall responsibility for the performance of the weapon system/equipment and its components rests with the single manager. This responsibility includes monitoring the Reliability and Maintainability (R&M) of the component parts of the system. This oversight requires accurate data be available on the performance of the system and its component parts whether managed by a single manager or by a separate commodity manager. To ensure R&M data is accurate requires constant vigilance over the completeness of the edit tables in the AF Maintenance Data Documentation (MDD) systems. The following delineates those specific responsibilities.

10-2.1 Work Unit Code (WUC) Tables. WUC Tables provide the hierarchical breakdown of the systems and subsystems for MDD reporting. The master WUC tables are maintained in REMIS and transmitted to the field for use in editing data. Table accuracy must be of primary concern, since maintenance actions cannot be reported from field or depot level without accurate tables.

10-2.1.1 The WUC tables should be developed, established in REMIS and transmitted to the appropriate data system prior to deployment of the weapon system. Procedures for maintaining the tables in REMIS and transmitting updates to field offices are in the REMIS users manual.

10-2.1.2 Serial-tracked/time-change indicators must be set when required, otherwise time-change data is not recorded. Serial tracking may be selected when required, but JUDICIOUS USE MUST BE MADE OF THIS CAPABILITY BECAUSE IT CAUSES ADDED WORK FOR THE FIELD MAINTENANCE PERSONNEL.

10-2.1.3 Establishment of WUCs for commodities installed on a weapon system must be coordinated between the SPD, PGM, and/or MGM.

10-2.1.4 Block numbers must be added to the WUC tables as applicable.

10-2.1.5 When a weapon-system-on-weapon-system relationship exists and a WUC table for the subordinate system must be included on the WUC table for the primary system, the following procedures apply:

10-2.1.5.1 The WUC manager for the subordinate system shall maintain the WUC table for the subordinate system. The WUC manager is responsible for making changes and transmitting them to the users.

10-2.1.5.2 The subordinate system WUC manager shall notify the primary system WUC manager by phone, FAX, or electronic-mail of any WUC changes to be accomplished on the primary system WUC table. This notification shall be followed by an AFTO Form 22.

10-2.1.5.3 The primary system WUC manager shall make the changes to the WUC table for the primary system and transmit them to the users.

10-2.2 Time-Compliance Technical Orders (TCTOs). TCTOs are issued against a weapon system to modify the system or to perform a critical inspection. In either case, it is critical that compliance be closely monitored.

10-2.2.1   TCTO master records must be entered in REMIS immediately following assignment of TCTO number, data code, and revision date so that compliance may be recorded.

10-2.2.2   When a master TCTO record is added to REMIS, the single manager must ensure that the old and new part numbers are in the REMIS master part number table. Procedures for managing TCTO records and Part Numbers (P/N) in REMIS are in the REMIS users manual.

10-2.3   Depot MDD. The single manager is responsible for the collection of depot-level maintenance data in accordance with (IAW) TO 00-20-2, unless waived as specified in paragraph 3.4 of this manual. This applies to both repair and TCTO compliance data.

10-2.3.1   The method of input of organic depot MDD is left to the discretion of each repair center. Centralized input of MDD data is acceptable. However, it is advisable that each repair activity input its own records so errors can be identified and corrected at the source.

10-2.3.2   For contractor-repaired items, the single manager has the option to require the repairing activity to provide hard copy MDD records to be input to REMIS as designated by the single manager or, where deemed economically feasible, to require direct reporting into REMIS by the contractor. Reference paragraph 3-8 of this TO.

10-2.4   The Single Manager shall:

10-2.4.1   Ensure that organic and non-organic work authorization documents, contracts, work specifications, project directives, etc., for MDD reportable equipment specify MDD reporting in accordance with this chapter.

10-2.4.2   Ensure that DI-MISC-81371 and DI-MISC-81372 are listed on DD Forms 1423 (Contract Data Requirements List) submitted to the Data Management Officer (DMO) in response to the data call. If the contract involves engines, DI-MGMT-81325 must also be listed on the DD Form 1423.

10-2.4.3   Coordinate MDD requirements with other ALC directorates to help ensure submission and control and input of ALC and contractor maintenance data.

10-2.4.4   Provide guidance or assistance to ALC and contractors to resolve MDD reporting problems.

10-2.4.5   Issue local operating instructions (OIs) as required to supplement MDD regulations.

10-2.4.6   Receive depot-level MDD input from contractor in the form of AFTO Form 349 (MDD Records) or digital format, and ensures the data is processed into REMIS or applicable Maintenance Management Information System (MMIS).

10-2.4.7   Arrange for contractor password and ID when data is input directly to a data system as part of a contract IAW AFI 33-219.

10-2.4.8   Notify applicable Contract Administration Office:

10-2.4.8.1   If contractor does not submit required MDD.

10-2.4.8.2   If quality of contractor MDD is deficient.

10-3   AIR LOGISTICS CENTERS AND CONTRACTOR MAINTENANCE DATA DOCUMENTATION RESPONSIBILITY.

This chapter assigns responsibility to the ALCs for depot organic and contractor MDD. MDD for depot-level maintenance and TCTOs compliance is essential for the accomplishment of maintenance engineering and materiel management functions. The submission and control of MDD is outlined in this chapter and fully described in the instructions, Technical Orders, and Data Item Descriptions (DIDs).

10-3.1   Policy. Depot-level maintenance, two-level maintenance, TCTO compliance and configuration data shall be reported by the ALCs and contractors to the standard MDD information systems, REMIS, G081, or IMDS. Time Changes and Inspections conducted while the system is in AFMC possession will also be reported. The Type IIA Precision Measurement Equipment Laboratories (PMELs) shall report MDD according to AFMCM 21-303, Vol. 2. All other AFMC PMELs shall report MDD Data according to this TO. Depot-level field teams or depot shops supporting base-level maintenance shall report MDD according to TO 00-20-2. The ALCs shall evaluate and audit organic and non-organic depot-level MDD as explained in this chapter. Depot-level MDD shall be submitted directly to REMIS or other systems as provided for in Memorandums of Agreement. The PMEL data shall be input through the PMEL Automated Maintenance System (PAMS) interfacing with the base Core Automated System (CAMS). Base-level MDD shall be

submitted to REMIS by depot field maintenance teams, and contractors through the MDD system in use at the base, or as specified in the contract.

10-3.1.1   The Office of Management and Budget (OMB) approval number for contractor data submission is 0704-0188 and the associated DIDs are DI-MISC-81371, DI-MIDC-81372, and DI-MGMT-81325.

10-3.2   Reporting Criteria. The primary intent of depot organic and contractor data documentation is to obtain maintenance information on corrections, malfunctions, status of TCTOs, and equipment configuration.

10-3.2.1   Exclude items waived according to paragraph 3.4 of this chapter.

10-3.3   Waivers. The single manager may grant a waiver from MDD requirements. The waiver must be signed at directorate level and a copy provided to the SPD and to HQ AFMC/ENB. Include the following information in all waiver requests:

- Purchase Request number or Project Order number
- Weapon System or end item
- National Stock Number (NSN)
- Part Number (P/N)
- Noun
- Work Unit Code (WUC)
- Number of items to be repaired
- Latest Mean Time Between Maintenance (MTBM)
- Statement of justification
- Name, office symbol, and telephone number of Single Manager
- Name, office symbol, and telephone number of point of contact

NOTE

TCTO and configuration reporting shall not be waived.

10-3.4   Center Responsibilities.

10-3.4.1   Establish a POC for MDD at the center.

10-3.4.1.1   Distribute information and provide guidance or assistance as necessary to other directorates and contractors.

10-3.4.1.2   Issue local instructions as required to supplement MDD instructions.

10-3.4.1.3   Take action as necessary to ensure compliance with MDD regulations.

10-3.4.2   The Production Areas shall:

10-3.4.2.1   Review organic work authorization documents, work specifications, project directives, etc. to determine the items to report maintenance data on.

10-3.4.2.2   Report maintenance data IAW procedures outlined in TO 00-20-2.

10-3.4.3   The ALC PMEL Branch shall:

10-3.4.3.1   Report maintenance data according to AFMCM 66-315.

10-3.4.3.2   Correct the error report and resubmit the data.

10-4   AFMC/EN RESPONSIBILITIES.

HQ AFMC/EN is the Air Force OPR for MDD policy that includes collection of maintenance data from field, depot, and contractor activities.

10-4.1   Standard Codes. HQ AFMC/EN is responsible for assignment of How Malfunction, Action Taken, When Discovered, and Type Maintenance Codes in REMIS.

10-4.2   Work Unit Code Policy. HQ AFMC/EN is responsible for the overall policy for assignment of WUCs and the control of the system-level standardization.

10-5   CONFIGURATION MANAGEMENT/TCTO REPORTING.

10-5.1   Configuration Management. Configuration management is a discipline comprised of three major areas of effort. The first is identification, which is the process of establishing and describing the contractual baseline. The description of the baseline is accomplished in technical documentation (specifications and drawings) and is the gauge against which contractor compliance is measured. The second area is configuration control, which is the process of maintaining the baseline identification, once established, and regulating all changes to the baseline. The third area is configuration accounting. This involves the process of recording status of all changes to the baseline configuration. Accounting for modifications to equipment is covered in this regulation; the other two areas are described in other directives. A fourth definition of configuration concerns the status of time change, serial tracked items, inspections, and mission equipment installed on the system.

10-5.1.1   TCTO Reporting. REMIS is the master repository for all Air Force TCTO records and reports, except ICBMs and classified programs.

10-5.1.2   Standard maintenance data is not always obtained for equipment being used for research or testing. TCTO master records for equipment in this status will not be input to the configuration-management systems. This policy must be rigidly followed to preclude unaccomplished TCTO man-hours appearing on the configuration-management system reports. When equipment is no longer required for research or testing and is to be transferred to the operational inventory, the equipment is updated to the latest configuration. At this time, master records shall be initiated for the equipment, and normal reporting procedures shall be instituted.

10-5.1.3   TCTO master records in REMIS must be compatible with decisions made by the single manager's production management personnel responsible for the rescission extension of TCTOs. Sixty days after the rescission date for each TCTO that has expired, open records shall be updated. The 60-day interval is to ensure applicable maintenance data has processed through the various information systems. Open records shall be closed out with a locally-prepared input and a memorandum for the record of the serial numbers (quantity of units for the commodity system) for all modified units shall be prepared. In those cases where production management does not extend the rescission date of a TCTO, and compliance may be accomplished at a later date (crash-damaged, bailed, leased, or loaned, aircraft/system, etc.), it would be improper to close out the open record status.

10-5.1.4   Instructions for maintaining TCTO records and status reports are contained in the REMIS user manual.

10-5.1.5   AFMC TCTO Managers are responsible for entering, maintaining, and pushing the TCTO master records in REMIS.

10-5.2   Configuration Tables.

10-5.2.1   Approved configuration tables are used by selected weapon systems to control part numbers installed on those systems. The Single Manager is responsible for the accuracy of these tables in the REMIS data base and pushing the tables to the field.

10-5.2.2   The Integrated Maintenance Data System (IMDS) will require Logical Configuration Tables to be built and maintained by the SM. The SM and the using commands will jointly determine the extent of the table. As a minimum, the table will contain the serially tracked warranted, inspected and time change part numbers.

10-5.2.3   Recommended changes for tracking purposes will be routed through the MAJCOM Functional for that system, to the lead command if different, then to the weapon system configuration table manager for final approval and inclusion to the table.

10-6   DEPOT MAINTENANCE DOCUMENTATION.

10-6.1   Depot Maintenance Actions to be Documented: The primary intent of contract and depot data collection is to obtain information on repair or fix actions incident to correction of malfunctions and for

configuration status. The term "depot" in this T.O. refers to both organic and contract depot maintenance. Reporting will be accomplished on the following in accordance with authorized directives:

10-6.1.1   All TCTO actions.

10-6.1.2   All engine repairs identifying the reason the engine was sent to the depot or reason for failure.

10-6.1.3   All depot modification and/or PDM routed item repairs including checked and found serviceable, NRTS, and condemned.

10-6.1.4   All NRTS actions (SRA to SRA or depot modification and/or PDM to distant SRA).

10-6.1.5   All MISTR actions including NRTS, bench check, primary reason for repair, and condemnations. Excludes disassembly, clean, paint, nondestructive testing, etc.

10-6.1.6   Bit and piece data in block 29 of AFTO Form 349.

10-6.1.7   All two-level maintenance actions.

10-6.1.8   All PDM actions that are "over and above" or "unscheduled."

10-6.1.9   Removals and Installs.

NOTE

Support General Code 03900, Depot Programmed Maintenance, will be used when a system, or a system components are returned to the depot for scheduled maintenance when a MJSN is not assigned for that system. The code will be used by the depot to record that an item or system was overhauled due to time expiration or schedule, rather than because of a specific failure. If a failure is discovered during overhaul, or maintenance is required beyond what is scheduled, then additional actions will be recorded in addition to the 03900/MJSN record.

APPENDIX A

WORKCENTER CODES

A-1 <u>PURPOSE.</u>

Workcenter codes (WCC) are used to identify organizational elements to which maintenance personnel are assigned. These codes are designed for use in the MDD to identify functional elements accomplishing maintenance and the manhours expended by maintenance personnel.   The purpose of this section is to provide an authoritative source that is readily available to each workcenter and to define the requirement for assigning workcenter codes.

The CAMS codes shown in this appendix are for reference only. The numbers that are missing from the previous appendix may continue to be used until such time as the unit has an organizational change or is converted to IMDS.

<u>CAMS</u> <u>12345</u>	<u>IMDS</u>
-100-	Commander
-101-	Analysis
-102-	Training
-103-	Administration
-104-	Mobility
-110-	Quality Assurance
-113-	Stand/Eval
-116-	Tech Orders
-117-	Flight Test
-120-	Maintenance
-121-	Job Control
-122-	Plans and Scheduling
-123-	Material Control
-160-	Management
-161-	Analysis
-21--	Flight Line
-23--	AGE
-31--	Support Equipment
-250-	Base Flight
-252-	Transient Maint
-310-	Fabrication
-311-	Machine Shop
-312-	Metal Processing
-313-	Structural Repair
-314-	Corrosion Control
-315-	Life Support
-317-	NDI
-320-	Propulsion
-321-	Recip Engine
-322-	Propeller
-323-	Jet Engine
-332-	Fuel Systems
-333-	Electrical Systems
-334-	Pneudraulics
-336-	Environmental Sys
-339-	Egress
-340-	Supervision

CAMS 12345	IMDS
-343-	Support Equipment
-410-	Comm/Nav
-413-	Electronic Warfare
-415-	Auto Flight Cont
-431-	Bomb/Nav
-432-	Weapons Control
-434-	Photo/Reccon
-435-	Sensor
-45--	PMEL
-465-	PMEL IV
-4842	AGE
-511-	Weapons Loading
-513-	Gun Systems
-520-	Muni Store and Maint
-521-	Nuclear Maint
-523-	Convent Maint
-524-	Re-entry Systems
-530-	EOD
-620-	Maintenance Control
-621-	Job Control
-623-	Material Control
-632-	Nav Aids Terminal
-633-	Nav Aids Enroute
-635-	Meteorological
-636-	Airfield WX
-637-	Regional WX
-638-	Global WX
-639-	Solar Observation
-640-	Ground Radar
-641-	Flight Facilit Radar
-642-	Ground Radar
-643-	Space Radar
-650-	Ground Comm Sys
-652-	COMSEC Sys
-653-	Auto Switch Equip
-654-	Inside Plant Tele
-655-	Outside Plant Tele
-656-	Outside Plant Wire
-657-	Outside Plant Wire
-658-	Space Comm Sys
-659-	Wideband Sys
-	Ground Radio
-65B-	Intra-Base Radio
-110-	Quality Control
-120-	Maintenance Control
-123-	Material Control

Tactical Missiles

-840-	Management
-8401	Munitions Supply
	Missile Section

CAMS	**IMDS**
12345	
-842-	Munitions Branch
-8421	Nuc Missile Maint
-8422	Conv Missile Maint
(Minuteman)	
-8601	Administration
-8602	Maintenance Supervision
-861-	Shop Maintenance
-8611	Mechanical
-8612	Electronics Laboratory
-8613	Power, Refigeration and Electrical (PREL)
-862-	Facility Maintenance
-8621	Periodic Maintenance Teams
-8623	Facility Maintenance Teams
-8624	Pneudraulics
-8625	Corrosion Control
-863-	Destruct Ordinance
-864-	Vehicle and Equipment Control
-8641	Vehicle Control
-8642	Equipment and Configuration Control
-865-	Re-entry Vehicles
-8651	Munitions Production Control
-8652	Re-entry Vehicle Maintenance
-888-	Aerospace Ground Equipment (when authorized)
-880-	Missile Systems Maintenance-Other
-881-	Refurbishment and Corrosion control (VAFB only)
-8812	Corrosion Control (VAFB only)
-8813	Refurbishment Equipment (VAFB only)
-883-	Facility Maintenance Management (VAFB only)
-884-	Mechanical-Electronic Maintenance (VAFB only)
-885-	Munitions Branch (VAFB only)
-E76-	Life Support
DEPOT	DEPOT
	Orderly Room
	Operations
	Flight Surgeon
	Intell
	Historian
	Public Affairs
	Comptroller
	Personnel
	POL
	Debrief
	Aircrew
	Vehicle Liaison
	Avionics Interm

NOTE

Minuteman (applicable to wings I, III, V, VI, and VII): Missile alert facility and LF workcenter configuration.

Squadron "A"

"A" Flight	"B" Flight	"C" Flight	"D" Flight	"E" Flight
-SA01 (MA)	-SB01 (MA)	-SC01 (MA)	-SD01 (MA)	-SE01 (MA)
-SA02 (LF)	-SB02 (LF)	-SC02 (LF)	-SD02 (LF)	-SE02 (LF)
-SA03 (LF)	-SB03 (LF)	-SC03 (LF)	-SD03 (LF)	-SE03 (LF)
-SA04 (LF)	-SB04 (LF)	-SC04 (LF)	-SD04 (LF)	-SE04 (LF)
-SA05 (LF)	-SB05 (LF)	-SC05 (LF)	-SD05 (LF)	-SE05 (LF)
-SA06 (LF)	-SB06 (LF)	-SC06 (LF)	-SD06 (LF)	-SE06 (LF)
-SA07 (LF)	-SB07 (LF)	-SC07 (LF)	-SD07 (LF)	-SE07 (LF)
-SA08 (LF)	-SB08 (LF)	-SC08 (LF)	-SD08 (LF)	-SE08 (LF)
-SA09 (LF)	-SB09 (LF)	-SC09 (LF)	-SD09 (LF)	-SE09 (LF)
-SA10 (LF)	-SB10 (LF)	-SC10 (LF)	-SD10 (LF)	-SE10 (LF)
-SA11 (LF)	-SB11 (LF)	-SC11 (LF)	-SD11 (LF)	-SE11 (LF)

NOTE

Additional flights will be the same except for the third position. Wing I fourth squadron will be the same as wing VI configuration using LCF designators - SPPP, - SQQQ, -SRRR, -SSSS, and - STTT.

Minuteman (applicable to wing VI): Missile alert facility and LF workcenter configuration.

-SAAA (MA)	-SBBB (MA)	-SCCC (MA)	-SDDD (MA)	-SEEE (MA)
-SA01 (LF-01)	-SB11 (LF-11)	-SC21 (LF-21)	-SD31 (LF-31)	-SE41 (LF-41)
-SA02 (LF-02)	-SB12 (LF-12)	-SC22 (LF-22)	-SD32 (LF-32)	-SE42 (LF-42)
-SA03 (LF-03)	-SB13 (LF-13)	-SC23 (LF-23)	-SD33 (LF-33)	-SE43 (LF-43)
-SA04 (LF-04)	-SB14 (LF-14)	-SC24 (LF-24)	-SD34 (LF-34)	-SE44 (LF-44)
-SA05 (LF-05)	-SB15 (LF-15)	-SC25 (LF-25)	-SD35 (LF-35)	-SE45 (LF-45)
-SA06 (LF-06)	-SB16 (LF-16)	-SC26 (LF-26)	-SE36 (LF-36)	-SE46 (LF-46)
-SA07 (LF-07)	-SB17 (LF-17)	-SC27 (LF-27)	-SD37 (LF-37)	-SE47 (LF-47)
-SA08 (LF-08)	-SB18 (LF-18)	-SC28 (LF-28)	-SD38 (LF-38)	-SE48 (LF-48)
-SA09 (LF-09)	-SB19 (LF-19)	-SC29 (LF-29)	-SD39 (LF-39)	-SE49 (LF-49)
-SA10 (LF-10)	-SB20 (LF-20)	-SC30 (LF-30)	-SD40 (LF-40)	-SE50 (LF-50)

NOTE

Additional squadrons will be the same except for third position, which will be the flight alpha designators as applicable. Designators for MAP's second, third and fourth squadrons will be:

Squadron "B"

-SFFF	-SGGG	-SHHH	-SIII	-SJJJ

Squadron "C"

-SKKK	-SLLL	-SMMM	-SNNN	-SOOO

Squadron "D"

-SPPP	-SQQQ	-SRRR	-SSSS	-STTT

CAMS **12345**	SUB FUNCTION	IMDS
-S9--	ICBM Non-Reporting Workcenters (Minuteman and - for other staff agencies and missile combat crews. Does not include maintenance staff)	
-S9--	Missile Combat Crews	

Civil Engineering

-M400	Management-Base Civil Engineering	

ICBM Maintenance

-M401	Administration/Training	
-M411	Porgram Development	
-M412	Planning	
-M413	Real Estate	
-M414	Cost Accounting	
-M415	Materiel Control	
-M420	Management-Missile Engineering	
-M421	Engineering-Tech/Design	
-M43-	Management-Operations/Maintenance	
-M431	Work Control	
-M441	Equipment Operations	
-M442	Pavements	
-M443	Grounds Maintenance	
-M451	Structural	
-M452	Protective Coating	
-M453	Plumbing	
-M454	Metal Working	
-M455	Masonry	
-M457	Structural Maintenance Repair Team (SMART)	
-M461	Refrigeration/Air Conditioning	
-M462	Liquid Fuels	
-M463	Heating Systems	
-M468	Instument Controls	
-M469	Electronic Controls	

ICBM Maintenance

-M471	Interior Electric	
-M472	Exterior Electric	
-M480	Power Production	
-M491	Water/Waste	
-M493	Entomology	

DEPOT WORKCENTERS/RCCs

PROPULSION MANAGEMENT DIRECTORATE (OC-ALC/LP) ORGANIZATION
STRUCTURE/ACCOUNTING ORGANIZATION CODES AMENDMENT 4

	ORG SYMBOL
• PLATING UNIT	LPPPC
• HEAT TREAT/PLASMA/BLAST AND PAINT UNIT	LPPPC
• CLEANING/BIASING AND WORK CONTROL DOCUMENT UNIT	LPPPC
• DISASSEMBLY UNIT	LPPPC
• PRATT AND WHITNEY ENGINE SECTION	LPPPE
• TF30 ASSEMBLY UNIT	LPPPE
• TF33/J57 ASSEMBLY UNIT	LPPPE
• STACK UNIT	LPPPE
• GENERAL ELECTRIC AND ALLISON ENGINE SECTION	LPPPF
• J79/TF41 AFTERBURNER ASSEMBLY UNIT	LPPPF
• F101/F108/F110/F118 ROTOR UNIT	LPPPF
• F101/F108/F110/F118 ENGINE REPAIR UNIT	LPPPF
• CLSS ENGINE SECTION	LPPPL
• CLSS ENGINE SQUADRON	LPPPL
• CASE REPAIR SECTION	LPPPM
• INLET GUIDE VANE/COMPRESSOR CASE/NDI/COMBUSTION CAN UNIT	LPPPM
• BEARING HSNGI HOUR GLASSI TOOLING REPAIR/PME UNIT	LPPPM
• GEARBOX REPAIR AND ASSEMBLY UNIT	LPPPM
• CASE FRAME REPAIR UNIT	LPPPM
• ROTATING COMPONENT SECTION	LPPPN
• WELDING/GRINDING REPAIR UNIT	LPPPN
• TURBINE/COMPRESSOR MANCHINING/WELDING UNIT	LPPPN
• CLEANING/INSPECTION/SURFACE ENHANCEMENT UNIT	LPPPN
• NDI/KITTING UNIT	LPPPN
• ENGINE TEST AND VERIFICATION SECTION	LPPPT
• ENGINE TEST UNIT	LPPPT
• ENGINE VERIFICATION UNIT	LPPPT
• 2ND WING ENGINE SHOP (PSEUDO)	LPPPT

AIRCRAFT MANAGEMENT DIRECTORATE (OC-ALC/LA)

ORGANIZATION STRUCTURE/ACCOUNTING ORGANIZATION CODES AMENDMENT 7

• 135 AIRCRAFT SECTION	LAPPA
• 135 MOVING LINE UNIT 1	LAPPA
• 135 MOVING LINE UNIT 2	LAPPA
• 135 PRE- AND POST-DOCK UNIT	LAPPA
• EXAMINATION, INVENTORY, AND TOOL CRIB UNIT	LAPPA
• 135 OVERFLOW UNIT	LAPPA
• 135 SPECIAL PURPOSE UNIT	LAPPA
• B-1B BOMBER AIRCRAFT SECTION	LAPPB
• DOCK UNIT	LAPPB
• STRUCTURAL UNIT	LAPPB
• PRE- AND POST-DOCK UNIT	LAPPB
• ELECTRONICS UNIT	LAPPB
• SERVICES SECTION	LAPPC
• DISASSEMBLY AND CLEANING UNIT	LAPPC
• PAINT UNIT	LAPPC
• SERVICING UNIT	LAPPC
• E-3 AIRCRAFT SECTION	LAPPE
• E-3 AIRCRAFT UNIT	LAPPE
• E-3 ELECTRONICS UNIT	LAPPE

- E-3/KE-3 ROYAL SAUDI AIR FORCE UNIT   LAPPE
- BOMBER A/C MODIFICATION SECTION   LAPPF
- B-52 AIRCRAFT UNIT   LAPPF
- STRUCTURAL UNIT   LAPPF
- EGRESS UNIT   LAPPF
- ELECTRONICS UNIT   LAPPF
- NONDESTRUCTIVE INSPECTION   LAPPI

COMMODITIES MANAGEMENT DIRECTORATE (OC-ALC/LI)

- AIR ACCESSORIES SECTION   LIPPA
  - AIR ACCESSORIES UNIT   LIPPA
  - CRUISE MISSILE ENGINE UNIT   LIPPA
  - TEXTILE AND LIFE SUPPORT UNIT   LIPPA
  - OXYGEN AND ASSOC EQUIPMENT UNIT   LIPPA
- COMMODITIES COMPOSITE AND CSD PRODUCTION SECTION   LIPPB
  - -135 CSD UNIT (PSEUDO)
  - WOOD AND COMPOSITE MANUFACTURE AND REPAIR UNIT   LIPPB
  - MISTR SHEETMETAL UNIT   LIPPB
  - F4 CSD UNIT (PSEUDO)
  - -141 CSD UNIT (PSEUDO)
  - CONSTANT SPEED DRIVE UNIT   LIPPB
  - AIRCRAFT STRUCTURAL SUPPORT UNIT   LIPPB
- FUEL ACCESSORIES SECTION   LIPPC
  - ELECTRICAL ASSYS OVERHAUL UNIT   LIPPC
  - FUEL AND GOVENOR ASSYS OVERHAUL UNIT   LIPPC
  - FUEL CNTRL OVERHAUL AND BEARING UNIT   LIPPC
  - FUEL CONTROL AND ASSYS TEST UNIT   LIPPC
- COMMODITIES ELECTRONIC SECTION   LIPPF
  - AVIONICS/ELECTRONICS COMPACT RANGE UNIT   LIPPF
  - CABLE MANUFACTURE AND REPAIR UNIT   LIPPF
  - ELECTRONIC/FLIGHT CONTROL UNIT   LIPPF
- MANUFACTURE AND REPAIR SECTION   LIPPM
  - NUMERICAL CONTROL MANUFACTURE, MODIFICATION
  - REPAIR UNIT   LIPPM
  - SHEETMETAL, TUBING, AND CABLE UNIT   LIPPM
  - TOOLING AND MACHINING UNIT   LIPPM
  - WELDING UNIT   LIPPM
- BOMBER/TANKER AVIONICS SECTION   LIPPT

VALID RCCs

AIRCRAFT DIRECTORATE (OO-ALC/LA)

MABSBZ	TRANSPORTATION	MABCMP	DET 1 CLSS (KADENA)
MABSDZ	MANAGEMENT INFORMATION	MABCPC	INDUSTRIAL SECTION (KADENA)
MABWHZ	MANAGEMENT INFORMATION	MABCPE	AVIONICS SECTION (KADENA)
MABWXX	RESOURCE MANAGEMENT DIVISION	MABCPN	TWO LEVEL MAINTENANCE (KADENA)
MABWQZ	QUALITY SUPPORT		
MABWWZ	WORKLOADING AND FUNDS MANAGEMENT	MABCXX	DET 35 (KADENA)
		MABRBX	LGS BB DMSC
MABXXX	AIRCRAFT DIRECTORATE	MABRCX	COMPOSITE BRANCH
MABXXY	AIRCRAFT DIRECTORATE	MABRCA	PLASTIC MANUFACTURING AND REPAIR
LAO OPERATIONS		MABRCB	COMPOSITE AND BONDING
MABMMA	649TH CLSS (OFF-BASE)	MABRCC	CANOPY/HYDRO/RADOME
MABMMB	649TH CLSS (ON-BASE)	MABRCD	RUBBER/PARACHUTE/TEXTILE REPAIR
MABPBC	F-16 ORGANIC/SHEETMETAL		
MABPBD	F-16 MODIFICATION	MABRCE	SHEET METAL/MYLAR MANUFACTURE
MABPBS	F-16 RGC B		
MABPBX	F-16 PRODUCTION BRANCH	MABRDX	LGS DD DMSC
MABPCX	PROCESS ENGINEERING BRANCH	MABREA	F-100 ENGINE
MABPDA	PREP FOR FLIGHT SECTION	MABREB	T-56 ENGINE
MABPDB	AVIONICS SECTION	MABREC	TUBING AND SHEETMETAL
MABPDC	FLIGHT TEST TDY/RGC B	MABRED	TWO LEVEL MAINTENANCE T56 (JEIM)
MABPDX	FLIGHT TEST BRANCH		
MABPEA	F-16 BLOCK 40/42	MABREE	TWO LEVEL MAINTENANCE F-100
MABPGA	F-16 BLOCK 25/30/32	MABREF	T-56/F100 TEST CELL
MABPJA	F-16 NVIS	MABREG	TWO LEVEL MAINTENANCE T56
MABPLB	C-130 WORK CENTER	MABREX	ENGINE BRANCH
MABPLB	C-130 WORK CENTER; SHEET METAL	MABRJX	LGS JJ DMSC
MABPLS	C-130 RGC B	MABRKA	F-16 SRU DIGITAL/ANALOG
MABPLX	C-130 SYSTEM MANAGEMENT BRANCH	MABRKB	F-16 LRU AVIONICS/RADIO FREQUENCY
MABPOX	ADMINISTRATION BRANCH	MABRKC	F-18 COMPUTER INERT SYSTEM
MABPOY	TRAINING SECTION	MABRMX	LGS EE DMSC
MABPPX	PLANNING BRANCH	MABRNB	F-4 RADAR
MABPPY	F-16/C-130 PLANNING SECTION	MABRNC	F-16 PROCESS PNEUMATIC
MABPPZ	F-16/C-130 PLANNING SUPPORT SECTION	MABRND	AWLS ASCN (C-141)
		MABRNR	F-16/B1 RADAR
MABPQX	DEPOT MAINTENANCE INVENTORY CENTER	MABRNS	F-15 DISPLAY INDICATOR
		MABRSA	PAINT/BEAD BLAST
MABPSB	PREP AND PAINT SECTION	MABRSB	STRUCTURAL WING REPAIR
MABPSC	PREP AND PAINT SECTION	MABRSC	C-130 FLIGHT CONTROL, F-16 RUDDER
MABPSD	SERVICES RGC B		
MABPSK	PRODUCTION SUPPORT SECTION (STATION 99)	MABRSF	SHEET METAL MISCELLANEOUS REPAIR
MABPSP	ECO	MABRSX	SHEETMETAL STRUCTURE SUPERVISION BRANCH
MABPSS	PRODUCTION SUPPORT SECTION (E&I)		
		MABRTX	BRANCH PLANNING/SCHEDULING
MABPSX	PRODUCTION SUPPORT BRANCH (SERVICES)	MABRTY	FACILITIES, ADMIN, SAFETY, TRAINING
MABPSY	PRODUCTION SUPPORT SECTION (TOOL CRIB)	MABRTZ	PLANNING/SCHEDULING FOR STRUCTURES, ENG AND COMPOSITS
MABPSZ	PRODUCTION SUPPORT BRANCH	MABRXX	TECHNICAL REPAIR DIVISION
MABPWX	MASTER SCHEDULING BRANCH	MABRXY	SCHEDULE/PLANNING FOR AVIONICS
MABPXX	AIRCRAFT DIVISION		
MABPXY	AIRCRAFT DIVISION		

MABRXZ	AIRCRAFT AVIONICS SUPERVISION BRANCH	MANSXX	INDUSTRIAL SUPPORT BRANCH
MANAAG	GUNS UNIT	MANWAT	649TH MUNITIONS PRODUCTION
MANAAT	TANKS, RACKS, ADAPTERS, PYLONS, SEATS (TRAPS)	MANWAX	649TH MUNITIONS ADMINISTRATIVE
		MANXXX	COMMODITIES DIRECTORATE
MANAEX	PLANNING/SCHEDULING	MANXXZ	INDUSTRIAL OPERATIONS DIVISION
MANAMX	LGS MM DMSC		
MANAXX	ARMAMENT BRANCH	**LM ICBM/MISSILES**	
MANCCH	PNEUDRAULICS	MAKDXX	SYSTEMS DIVISION
MANCCN	EPU	MAKEXX	SAFETY OFFICE
MANCCT	PHYSIOLOGICAL TRAINERS	MAKPAA	MISSILE MAINTENANCE
MANCEX	PLANNING	MAKPAB	CABLE/NCU
MANCSX	SCHEDULING	MAKPAC	PROPELLSION SYS ROCKET
MANCQX	LGS QQ DMSC	MAKPAD	REENTRY SYSTEM LAUNCH PROGRAM
MANCWX	LGS WW DMSC		
MANCXX	COMMODITIES BRANCH	MAKPAX	MISSILE MAINTENANCE BRANCH
MANIAC	COMPASS/CABLES	MAKPEB	GROUND MECHANICAL (BLDG 847)
MANIAI	INSTRUMENTS	MAKPEC	ELECTRONICS (BLDG 100)
MANIAP	PHOTONICS	MAKPEX	MATERIAL
MANIAX	ELECTRONICS SECTION	MAKPEY	OVERHEAD
MANIBA	LAUNCH/GBU	MAKPGB	SMIC
MANIBB	AGM65/ACM/ALCM	MAKPGD	PROPELLENT LAB
MANIBX	ELECTRONICS SECTION	MAKPGX	MISSILE INTEGRATION FACILITY BRANCH
MANIEX	PLANNING		
MANISX	SCHEDULING	MAKPGY	SMIC OVERHEAD
MANIXX	ELECTRONICS BRANCH	MAKPGZ	OVERHEAD - PROPELLENT LAB
MANOTX	FACILITY ENGINEERING BRANCH	MAKPMD	TRANSPORTATION AND STORAGE
MANOTZ	SUPPORT MANAGEMENT DIVISION	MAKPMX	TRANSPORTATION MANAGEMENT
MANPBG	GRINDING UNIT	MAKPMY	MISSILE MAINTENANCE SUPPORT BRANCH
MANPBP	PLATING UNIT		
MANPBX	METAL PROCESSING UNIT	MAKPTC	RANGE OPERATIONS
MANPEX	PLANNING UNIT	MAKPTX	MISSILE OPERATIONS/RANGE OVHD/ DEACT BRANCH
MANPEY	SCHEDULING UNIT		
MANPKX	LGS KK DMSC	MAKPVA	VANDENBURG
MANPNA	CONTRACT WHEELS	MAKPWA	WING I - MALSTROM AFB
MANPND	CONTRACT WHEELS	MAKPWC	WING III - MINOT AFB
MANPNE	CONTRACT WHEELS	MAKPWE	WING V - FE WARREN
MANPNF	CONTRACT WHEELS	MAKPWF	WING VI - GRAND FORKS
MANPNG	CONTRACT WHEELS	MAKPWX	RIVET MILE OVERHEAD
MANPNM	CONTRACT WHEELS	MAKPXX	MAINTENANCE DIVISION
MANPNT	CONTRACT WHEELS	MAKPXY	ALERT CENTER
MANPNX	CONTRACT WHEELS SECTION	MAKSHX	LGS HH DMSC
MANPSA	STRUT ASSEMBLY	MAKSLX	LGS LL DMSC
MANPSC	C5/B1B ASSEMBLY UNIT	MAKSOX	INDUSTRIAL SUPPORT BRANCH
MANPSE	E&I STRIP/BLAST UNIT	MAKXXX	ICBM DIRECTORATE
MANPSH	C5/FTR MACHINING UNIT		
MANPSM	HW MACHINING UNIT	**TI TECHNOLOGY AND INDUSTRIAL SUPPORT**	
MANPSX	LANDING GEAR SECTION	MADEAA	FUNCTIONAL TRAINING - DIRECT LABOR
MANPWB	BRAKE ASSEMBLY UNIT		
MANPWC	WHEELS AND BRAKES MACHINING UNIT	MADEAX	FUNCTIONAL TRAINING MANAGEMENT (G&A)
		MADEBX	TECHNICAL TRAINING (G&A)
MANPWD	WHEEL ASSEMBLY	MADECX	LOGISTICS/QUALITY TRAINING (G&A)
MANPWF	WELDING UNIT		
MANPWX	WHEELS AND BRAKES SECTION	MADEXY	LA HOLDING POOL - TEAM LEADS (G&A)
MANPXZ	LANDING GEAR BRANCH		
MANSAX	ADMINISTRATIVE	MADEXX	TECHNICAL AND INDUSTRIAL
MANSFX	FINANCIAL	SKILLS	DIVISION (G&A)

MADORX	RESOURCES MANAGEMENT BRANCH	MADSEX	SOFTWARE TECHNOLOGY SUPPORT BRANCH
MADORY	ADMINISTRATION ANALYSIS BRANCH	MADSFA	OPERATIONAL FLIGHT PROGRAM SECTION
MADOSY	TI ACCRUAL/EXPENSE ACCOUNT (G&A)	MADSFB	OPERATIONAL FLIGHT PROGRAM SECTION
MADOXX	PROGRAM CONTROL DIVISION	MADSFC	OPERATIONAL FLIGHT PROGRAM SECTION
MADPEX	ENGINEERING AND PLANNING BRANCH (G&A)	MADSFD	OPERATIONAL FLIGHT PROGRAM SECTION
MADPEY	ENGINEERING SECTION (G&A)	MADSFX	OPERATIONAL FLIGHT PROGRAM DEVELOPMENT BRANCH
MADPEZ	CONTRACTING SECTION (G&A)		
MADPLA	ELECTRONIC MECHANICAL/OPTICAL DIMENSIONAL	MADSFY	OPERATIONAL FLIGHT PROGRAM DEVELOPMENT
MADPLB	AUTO TEST EQUIPMENT (ATE) AND RADIAC REPAIR	MADSHA	OPERATIONAL FLIGHT PROGRAM SECTION
MADPLC	TEST SYSTEMS WEST	MADSHB	OPERATIONAL FLIGHT PROGRAM SECTION
MADPLD	MISSILE AND MICROWAVE RADAR ATE	MADSHC	OPERATIONAL FLIGHT PROGRAM SECTION
MADPLG	SMALL MISSILE TEST EQUIPMENT	MADSHD	OPERATIONAL FLIGHT PROGRAM SECTION
MADPLJ	AUTOMATED SYSTEMS ELECTRICAL REPAIR		
MADPLX	PMEL BRANCH (G&A)	MADSHX	OPERATIONAL FLIGHT PROGRAM SUPPORT BRANCH
MADPLY	PMEL LG DMSC SUPPORT	MADSMB	ATE DEVELOPMENT/MAINTENANCE SECTION
MADPLZ	PMEL BRANCH		
MADPMC	WOODMILL AND INVESTMENT CASTING	MADSMC	SOFTWARE DEVELOPMENT/ INTEGRATION SECTION
MADPMD	KC-130 MODEL SUPPORT	MADSMD	ATE AND WEAPON SYSTEM INTERFACE ENGINEERING
MADPME	ELECTRONIC SUPPORT SECTION		
MADPMJ	BATTERY SHOP	MADSME	ENGINEERING PROTOTYPE AND TEST SECTION
MADPMN	NUMERICAL CONTROL		
MADPMR	RAPID RESPONSE	MADSMF	ENGINEERING PROTOTYPE AND TEST SECTION
MADPMT	TOOL AND DIE		
MADPMX	INSTALLATION SUPPORT BRANCH (OVRHD)	MADSMX	WEAPON SYSTEM SOFTWARE ENGINEERING BRANCH
MADPMY	EQUIPMENT MAINTENANCE (G&A)	MADSMY	WEAPON SYSTEM SOFTWARE ENGINEERING (DEPREC.)
MADPMZ	MECHANICAL SUPPORT (G&A)		
MADPRX	MATERIAL CONTROL SECTION (G&A)		
MADPTY	TOOL MANAGEMENT SECTION (G&A)	MADSMZ	HARDWARE TECHNOLOGY (DEPRECIATION)
MADPXX	PLANT MANAGEMENT DIVISION		
MADSAA	AIRCRAFT SOFTWARE DEVELOPMENT SECTION	MADSSA	SOFTWARE CONTROL CENTER (SCC)
MADSAB	F-16 AVIONICS INTERMEDIATE (AIS) SHOP SECTION	MADSTX	SUPPORT BRANCH
		MADSXX	SOFTWARE ENGINEERING DIVISION
MADSAC	AIRBORNE SOFTWARE ENGINEERING SECTION	MADVLC	CHEMICAL SCIENCES LABORATORY SECTION
MADSAD	AIRBORNE SOFTWARE DEVELOPMENT SECTION	MADVLE	ELECTRONIC LABORATORY AND ENGINEERING SERVICES
MADSAX	AIRBORNE SOFTWARE DEVELOPMENT BRANCH	MADVLM	MATERIAL SCIENCE AND ENGINEERING LABORATORY
MADSEA	SOFTWARE ENGINEERING ENVIRONMENT SECTION	MADVLV	VERIFICATION LABORATORY SECTION
MADSEB	SOFTWARE INFORMATION REPOSITORY SECTION	MADVLX	SCIENCE AND ENGINEERING LABORATORY
MADSEC	CUSTOMER SERVICE SECTION	MADVLY	SCIENCE AND ENGINEERING LABORATORY
MADSED	SOFTWARE TECHNOLOGY CONFERENCE	MADVNA	AIRCRAFT X-RAY AND NDI SECTION

MADVNB ULTRASONIC AND EDDY CURRENT SECTION
MADVND MISSILE X-RAY AND COMPUTED TOMOGRAPHY
MADVNM NDI - COMPUTED TOMOGRAPHY (CT)
MADVNN NDI WHEEL CONTRACT WORKLOAD
MADVNX NON-DESTRUCTIVE TEST INSPECTION
MADVNZ AIRCRAFT X-RAY AND NON-DESTRUCTIVE TEST INSPECTION

MADVXX SCIENCE AND ENGINEERING SUPPORT
MADVXY MONTHLY EXPENSES/ACCRUAL ACCOUNT
MADXXX TECHNOLOGY AND INDUSTRIAL SUPPORT DIRECTORATE

TECHNOLOGY AND INDUSTRIAL SUPPORT DIRECTORATE (ALC/TI)

MDEAA- MISCELLANEOUS TRAINING
MDLBB- BATTERY SHOP TEAM
MDLLA- ELECTRONIC MECHICANCAL DIMENSION UNIT
MDLLB- INSTRUMENT PHOTO AVIONICS TEAM
MDLLC- MISSILE TEST EQUIPMENT WEST TEAM
MDLLD- MISSILE TEST EQUIPMENT EAST TEAM
MDLLE- AUTOMATED TEST EQUIPMENT (ATE)/INSTRUMENT FAB TEAM
MDLLF- ATE AND RADIO REPAIR TEAM
MDLLG- SMALL MISSILE TEST EQUIPMENT TEAM
MDLLH- ATE INSTRUMENT FABRICATION
MDLLJ- E-35 WORKLOAD
MDLMB- HARDWARE TECHNOLOGY TEAM
MDLNA- LANDING GEAR PLATING AND X-RAY TEAM
MDLNB- ULTRASONICIEDDY CURRENT TEAM
MDLND- MISSILE X-RAY COMPUTED TOMOGRAPHY TEAM
MDLNK- NONDESTRUCTIVE TEST INSPECTION
MDLPP- PARACHUTE/TEXTILE TEAM
MDLRR- RUBBER REPAIR TEAM
MDOSA- SMALL COMPUTERS
MDPMB- EQUIPMENT MAINTENANCE
MDPMC- CARPENTRY SUPPORT
MDPMD- DLA SUPPORT
MDPME- ELECTRONIC REPAIR TEAM
MDRIC- DUSTRIAL PRODUCTS (METAL)
MDRMP- SUPPORT CENTER PACIFIC (KADENA)

MDROM- SPECIAL PROJECTS
MDRPC- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT
MDRPE- AVIONICS/ELECTRONIC
MDRPF- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT
MDRPN- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT
MDSAA- AIRCRAFT SOFTWARE DEVELOPMENT
MDSAB- F-16 AVIONICS IMMEDIATE SHOP
MDSAC- SOFTWARE TECHNOLOGY TEAM
MDSAD- NEUTRAL ENGINEER RESEARCH AND DEVELOPMENT
MDSFA- OPERATIONAL FLIGHT PROGRAM
MDSFB- OPERATIONAL FLIGHT PROGRAM
MDSFC- OPERATIONAL FLIGHT PROGRAM
MDSFD- OPERATIONAL FLIGHT PROGRAM
MDSHA- AVIONICS SOFTWARE TEST TEAM
MDSHB- OPERATIONAL FLIGHT PROGRAM TEAM
MDSHC- OPERATIONAL FLIGHT PROGRAM TEST STAND DEVELOPMENT
MDSHD- OPERATIONAL FLIGHT PROGRAM SUPPORT
MDSMA- MISSILE SYSTEM E35/ATE SOFTWARE
MDSMB- ELECTRONIC DEVICES DEVELOPMENT
MDSMC- MISSILE OPERATIONAL SOFTWARE
MDSSA- SOFTWARE ENGINEERING SUPPORT
MDVLC- CHEMICALS SCIENCE LAB TEAM
MDVLM- MATERIALS SCIENCE LAB TEAM
MDVLV- MATERIALS SCIENCE LABORATORY
MDVVH- HAZARDOUS WASTE TEAM

C-130 PRODUCTION DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
C-130 Production Branch	LBPF

F-15 PRODUCTION DIVISION (WR-ALC)

Production Branch - A	LFPA
Production Branch - B	LFPB
Production Branch - C	LFPC
Production Support Branch	LFPS
Functional Test Team	LFPSF
Impact Team	LFPSI
Miscellaneous Prod Team	LFPSM

C-141 PRODUCTION DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
C-141 Production Branch - A	LJPA
C-141 Production Branch - B	LJPB
C-141 Production Branch - C	LJPC
Speedline	LJPD
Speedline Team	LJPDA
Functional Test Team	LJPDB
Pre/Post Dock Level	LJPDC
Engine Shop Team	LJPDD
NDI Team	LJPPA
Back Shop Team	LJPPC
Corrosion Control Team	LJPSA
Paint Team	LJPSB

ELECTRONIC WARFARE PRODUCTION DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
Strategic Production Branch	LNPA
Strategic Production Team - A	LNPAA
Strategic Production Team - B	LNPAB
Strategic Production Team - C	LNPAC
Strategic Production Team - D	LNPAD
Strategic Production Team - E	LNPAE
Strategic Production Team - F	LNPAF
Tactical Production Branch	LNPB
Tactical Production Team - A	LNPBA
Tactical Production Team - B	LNPBB
Tactical Production Team - C	LNPBC
Tactical Production Team - D	LNPBD
Tactical Production Team - E	LNPBE
Tactical Production Team - F	LNPBF
Software Production Branch	LNPC
Software Production Team - A	LNPCA
Software Production Team - B	LNPCB
Software Production Team - C	LNPCC
Software Production Team - D	LNPCD
Production Services Branch	LNPD
Strategic Services Team	LNPDA
Special Program Services Team	LNPDC
Tactical Services Team	LNPDC
Management Services Team	LNPDD

AVIONICS PRODUCTION DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
Software Production Branch - A	LYPA
Software Production Branch - B	LYPB
Software Production Branch - C	LYPC
Hardware Production Branch - A	LYPD
Hardware Production Branch - B	LYPE
Hardware Production Branch - C	LYPF
Hardware Production Branch - D	LYPG
Manufacturing Branch	LYPM
Production Processes Branch	LYPR
LANTIRN Nav/Tgt Pod/Depot Prod	LY-1

SPECIAL SYSTEM REPAIR DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
ATE/Gyro Team	TIAEA
F-15 Pylon	TIAEB
Indicator/Gyro Team 2B	TIAEC
Electrical Team	TIAED
Gyro Elect Overhead Support	TIAES
Gyro Team 1A	TIAGA
Gyro Team 1B	TIAGB
Gyro Team 1C	TIAGC
Gyro Team 1D	TIAGE
Gyro Overhead Support	TIAGE
Prop Team - A	TIAPA
Prop Team - B	TIAPB
Prop Team - C	TIAPC
Hydrostat Team	TIAPD
Propeller Overhead Support	TIAPS

COMPONENT PROCESSING DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
F-15 Plastic Team	TIBPA
C-141 Plastic Team	TIBPB
C-130 Plastic Team	TIBPC
Fabric Shop	TIBPD
Overhead Support	TIBPS
Paint Team	TIBSA
Electroplate Team - A	TIBSB
Electroplate Team - B	TIBSC
Electroplate Team - C	TIBSD
Welding Heat/Treat Team	TIBSE
Wet Clean Team	TIBSF
Overhead Support	TIBSS

TECHNOLOGY AND ENGINEERING SCIENCE DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
PME System Team - A	TIEBA
PME System Team - B	TIEBB
PME System Team - C	TIEBC
PME Overhead Support Team	TIEBS
Dimensional Verification Team	TIECD
Electronic Testing Team	TIECE

Gun Test Range	TIECM
Mechanical Testing Team	TIECM
Vehicle Testing	TIECM
Productivity Tools Team	TIECP

COMPONENT REPAIR DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
Bond Team - A	TIKBA
Bond Team - B	TIKBB
Bond Team - C	TIKBC
Bond Team - D	TIKBD
Bond Team - E	TIKBE
Repair Team - 1A	TIKCA
Repair Team - 1B	TIKCA
Repair Team - 1C	TIKCC
Repair Team - 1D	TIKCD
Repair Team - 1E	TIKCE
Repair Team - 1F	TIKCF
Repair Team - 2A	TIKPA
Repair Team - 2B	TIKPB
Repair Team - 2C	TIKPC
Repair Team - 2D	TIKPD
Repair Team - 2E	TIKPE
Overhead Support	TIKPS

STRUCTURAL REPAIR DIVISION (WR-ALC)

ORGANIZATION	ORG SYMBOL
Overhead Support	TIRAS
Overhead Support	TIRBS
Overhead Support	TIRCS
Overhead Support	TIRNS

SA ALC DEPOT WORKCENTERS/RCCs

ORGANIZATION	SYMBOL
AIRCRAFT DIRECTORATE	SA-ALC/LA
C-5 Production	LAPCC
Avionics, Egress, Hydraulics Section	LAPMA
Paint and Corrosion Section	LAPMB
Bonding and Sheetmetal Repair	LAPMF
AEROSPACE EQUIPMENT DIRECTORATE	SA-ALC/LD
Precision Measurement Equipment Owner/User Calibration	LDSLA
Precision Measurement Equipment Calibration/Repair	LDSLL
Automated Support Equipment RCC	LDSRA
Engine Electronics RCC	LDSRE
Test Equipment RCC	LDSRG
Secondary Power Systems and Starters	LDTAA
Gas Turbine Engines	LDTAG
Cleaning and Inspection	LDTAI
Electrical Accessories	LDTBA
Metal Processing	LDTBC
Pneudraulic and Hydraulic Section	LDTBH
Engine Fuel Accessories	LDTFA
Fuel Systems	LDTFC
Fuel Accessories Test	LDTFT

MATURE AIRCRAFT (FIGHTER/TRAINER) DIRECTORATE	SA-ALC/LF
T-38 Production Branch	LFPC
T-38 Electrical Unit	LFPCE
T-38 Sheetmetal Office	LFPCF
PROPULSION DIRECTORATE	SA-ALC/LP
Fighter Engine	LPPAF
F100/200 Core and HPT Module Repair	LPPAFH
Transport Engine	LPPAT
Two-Level Maintenance	LPPJ
Welding/Module Repair	LPPPC
Specialized Repair	LPPPN
Unified Fuel Control	LPPTK
CRYPTOLOGIC MANAGEMENT DIRECTORATE	SA-ALC/LR
Hardware Maintenance, ATE Production	LTAFA
Hardware Maintenance, Cyphony Production	LTAFC
Hardware Maintenance, Data Production	LTAFD
Hardware Maintenance, SIGINT Systems	LTAFS
Hardward Maintenance, Surety Systems	LTAFT
Software Maintenance, Trusted Software	LTAST
DIRECTORATE OF NUCLEAR WEAPONS	SA-ALC/NW
Avionics	NWPPA
Electronics	NWPPE
Mechanical	NWPPM
RV/A&S Test	NWPPT

APPENDIX B

COMMAND CODES

B-1   The data codes listed in this appendix are used to identify the owning command and/or activity of equipment contained for MDD documentation on equipment without an assigned ID number.

MAJOR COMMAND	COMMAND CODE	NOMENCLATURE
ACC	1C	AIR COMBAT COMMAND
AET	0J	AIR EDUCATION AND TRAINING COMMAND
AFA	0B	USAF ACADEMY
AFE	0D	USAF IN EUROPE
AFM	5A	AIR FORCE MUSEUM
AFR	0M	AF RESERVE
AIA	0U	AIR FORCE INTELLIGENCE AGENCY
AMC	1L	AIR MOBILITY COMMAND
ANG	4Z	AIR NATIONAL GUARD
AUN	0K	AIR UNIVERSITY
BAF	4D	BELGIAN AIR FORCE
BDA	2V	AF BASE DISPOSAL AGENCY
CAC	47	COMMERCIAL AIRCRAFT
CAP	5B	CIVIL AIR PATROL
CMC	0Y	AF COMMUNICATIONS COMMAND
CON	4N	CONTRACTOR SUPPORT
DOD	49	DEPARTMENT OF DEFENSE
ELC	0U	AIR FORCE INTELLIGENCE COMMAND
EPG	4H	EUROPEAN GROUP
ESC	1W	AF ENGINEERING AND SERVICE CENTER
FAA	4B	FEDERAL AVIATION AGENCY
FMS	0X	FOREIGN MILITARY SALES
HAF	0N	HEADQUARTERS AIR FORCE
HQC	0P	HEADQUARTERS COMMAND, AF HISTORICAL
LAN	3N	AFELM US ATLANTIC COMMAND
MAP	40	MILITARY ASSISTANCE PROGRAM
MTC	1M	AIR FORCE MATERIEL COMMAND
NAP	4I	NATO AWACS PROGRAM
NGM	34	ANG UNITS - MOBILIZATION
NOR	2S	HQ NORAD
OAF	4A	OTHER US AIR FORCE ACTIVITIES
OFG	46	OTHER FOREIGN GOVERNMENT
OGA	4C	OTHER US GOVERNMENT AGENCY
ONA	5C	OTHER NATIONAL AGENCY

MAJOR COMMAND	COMMAND CODE	NOMENCLATURE
PAF	0R	PACIFIC AIR FORCE
PCO	30	AFELM US PACIFIC COMMAND
RAF	43	ROYAL AIR FORCE, UNITED KINGDOM
RCA	42	ROYAL CANADIAN AIR FORCE
RDA	4E	ROYAL DANISH AIR FORCE
RDF	3X	RAPID DEPLOYMENT FORCE
RNL	4F	ROYAL NETHERLANDS AIR FORCE
RNO	4G	ROYAL NORWEGIAN AIR FORCE
SAJ	3Q	AFELM US STRATEGIC COMMAND
SOC	0V	AF SPECIAL OPERATION COMMAND
SPC	1S	AIR FORCE SPACE COMMAND
SSE	3Z	JOINT SVCS SERE AGENCY
SUC	3M	AFELM US SOUTHERN COMMAND
USA	5D	U.S. ARMY
USN	5E	U.S. NAVY
WGR	45	GERMAN AIR FORCE

APPENDIX C

CATEGORY OF LABOR CODES

C-1   The following data codes are to be used for differentiating the various types of maintenance resources used to support the USAF equipment maintenance program. These codes are mandatory for all units under the MDD process.

Data Items	Data Codes
Military, Regular Duty Hours	1
Military, Overtime Hours	2
Federal Service Employee-Regular Duty Hours	3
Federal Service Employee-Overtime Hours	4
Local National Employee Hours	5
Contractor Labor Hours	6

C-2   The applicable code will be entered on the appropriate G081/CAMS/REMIS data entry screen as outlined in this T.O.

APPENDIX D

COMPATIBILITY EDITS

D-1 PURPOSE.

Compatibility codes are used to edit the maintenance records being input to any MDC system. The edits are used to maintain the accuracy of the data collected. Edits are also used to control exceptions to the normal data inputs. The attached edits are applicable to all automated MDC systems and manual collection when the automated system is not available.

D-2 MAINTENANCE TRANSACTION TYPE RECORDS.

Type 1 = On-Equipment
Type 2 = Complete Engine Bench Check and/or Test and/or Repair
Type 3 = Off-Equipment (includes transactions using a master ID number for TMDE and/or AGE)
Type 4 = Indirect Labor
Type 5 = Bit and Piece
Type 6 = Removal or Installation of a Time-Change or Serially-Controlled Item
Type 7 = Engine Removal or Installation

D-2.1 D-2.1 The following edits apply to all types:

D-2.1.1 BLOCK 1, JOB CONTROL NUMBER: First five positions must be 00001- 99366; the sixth position cannot be alpha characters "I" or "O"; the last three positions can be alpha-numeric.

D-2.1.2 BLOCK 2, PERFORMING WORKCENTER: First position must match a valid assigned unit-ID; second-fifth positions must be valid mnemonic workcenter performing the work.

D-2.1.3 BLOCK 3, ID/SERIAL NUMBER: If ID, must match valid assigned unit-ID; Type Equipment (first position); last four positions must be alpha-numeric. For non-ID (on-equipment) serial number must be eight-position numeric, or alpha-numeric for SRD "AHX" or "AHZ." ID must be valid ID number contained in current equipment listing.

D-2.1.4 D-2.1.4 BLOCK 4, MDS: Must be blank when equipment ID is used in block 3. MDS or JETD, must match the format in the CAMS/REMIS tables and codes for the particular SRD code. MDS field contains eight spaces. Input is as follows:

DATA	SPACES	FIELD
Mission	1-3	prefix with spaces alpha
Design	4-6	prefix with zeros numeric
Series	7-8	alpha

Last position (series) will always be blank. Non-AF must be input with three trailing spaces.

D-2.1.5 BLOCK 5, SRD: The SRD is used by both maintenance and supply. When no ID number is used in block 3, this block must contain a valid SRD.

D-2.1.6 BLOCK 6, TIME: May be blank. For certain recording requirements, this field must contain end item operating time, prefixed with zeros (five positions). For TMDE equipment, must be next date due or left blank.

D-2.1.7 BLOCK 8, SORTIES: May be blank or must contain three numerics. Must be blank for units under AFR 66-1.

D-2.1.8 BLOCKS 10 AND 12, REMOVED AND/OR INSTALLED ENGINE TIME: Type seven record must contain five numerics.

D-2.1.9 BLOCKS 11 AND 13, ENGINE ID: Type seven record must contain a valid engine ID number for removed or installed engines (or modules).

D-2.1.10 BLOCK 19, FSC: Type 3, 5, and 6 records must be four numerics and cannot be 0000.

D-2.1.11 BLOCK 20, PART NUMBER: Type 3, 5, and 6 records must contain from one to 15 alpha-numeric characters with no embedded spaces. Slashes or dashes may not be first or last character.

D-2.1.12 BLOCK 21, SERIAL NUMBER AND/OR TIMES: Type six record must contain 10 alpha-numeric characters for the serial number of removed components with an asterisk in the -06 WUC manual. For off-equipment type three records, this block must contain the serial number of components being modified by commodity TCTO or the operating time (five positions) for in-shop repair of time-change or time-sensitive components. May be blank on type three records.

D-2.1.13 BLOCK 22, TAG NUMBER: May be blank or six numerics for type 1, 3, and 5 records. Must be six numerics for type 2, 6, and 7 records.

D-2.1.14 BLOCK 23 THROUGH 24, INSTALLED SERIALLY-CONTROLLED COMPONENT: Same edits as blocks 20-21 for removed component type six record.

D-2.1.15 BLOCK 25, OPERATING TIME AND/OR CYCLES: Must contain five numerics for installed serially controlled components.

D-2.2 Column A, Type Maintenance, Column E. When Discovered.

D-2.2.1 If the first position of the SRD is "B," "C," "E," "F," "J," "K," "L," "Q," "U," or "1" through "9," TM table 7 and WD table 15.

D-2.2.2 If the SRD is "X--," "SP-," "SM-," "ST-," "S1-," "S2-," or "S3-," TM table 2 and WD table 11.

D-2.2.3 If the SRD is "H--," TM table 8 and WD table 13.

D-2.2.4 If the SRD is "Y--," TM table 9 and WD table 14.

D-2.2.5 If the SRD is "RS-," TM table 10 and WD table 11.

D-2.2.6 If the SRD is "M--," "RM-," "GMC," "GMD," "GMK," "GMM," "GMP," "GMR," "GMV," "GMW," "GMX," or "GGZ," TM table 4 and WD table 12.

D-2.2.7 If the SRD is "N--," "GG-," "GX-," "G1-," "G2-," "G3-," "G4-," or "GFS," TM table 3 and WD table 11.

D-2.2.8 If the SRD is "TRN," "TRP," "TRQ," "TRR," or "TRS," TM table 4 and WD table 13.

D-2.2.9 If the SRD is "TRA," "TRB," "TRC," or "TRD," TM table 6 and WD table 13.

D-2.2.10 If the SRD is "TZM," "TZN," "TZQ," or "TZP," TM table 3 and WD table 13.

D-2.2.11 If the SRD is "TRG," "TRH," "TRJ," "TX" or "TZ-," other than above, TM table 1, and WD table 13.

D-2.2.12 If the SRD is "A-," "R5-," "R6-," "R7-," or "R8-," TM table 1 and WD table 11.

D-2.2.13 If the SRD is "G-" or "SA-," other than above, TM table 5 and WD table 13.

D-2.2.14 Deleted.

D-2.2.15 If TM is "X," WD may be alpha-numeric.

D-2.2.16 If WUC1-2 is "01" - "09" (not TCTO or R&D), WD must be blank.

D-2.2.17 If the SRD is "T--," other than above, TM table 6 and YVD table 13.

D-2.3 Column B. Component Position. Must be "0" through "8" for all on-equipment maintenance actions involving installed engine or engine components when using work unit codes which begin with 21, 22, 23, 24, 25, 26, 27, 28, or 29. Also required when installing (action taken "Q" or "R") egress compo-nents. Egress components are identified by an egress indicator of "E" or "B." Component position must be "1" through "8" for egress components.   Component position for egress items are locally determined.

D-2.4 Column C, WUC.

D-2.4.1 First two positions may be "01" through "09" for all equipment.

D-2.4.2 For type maintenance "X" (R&D), first two positions must be alpha-numeric.

D-2.4.3 For aerospace equipment that is MDC reportable, the WUC must be valid in the REMIS table.

D-2.5   Column D, Action Taken.

D-2.5.1   On-Equipment or Off-Equipment (type 1 or 3 record). If WUC (1-2) is 01 through 09 and type maintenance is not T or X, ATC must be blank.

D-2.5.2   On-Equipment (type 1 record). Action taken must be E, F, G, H, J, K, L, P, Q, R, S, T, U, V, X, Y, or Z.

D-2.5.3   Complete Engine Bench Check and/or Test and/or Repair (type 2 record). Action taken must be A through D, X, or 0 through 9.

D-2.5.4   Off-Equipment (type 3 record). Action taken must be A, B, C, D, E, F, G, J, K, L, M, N, P, Q, R, T, X, Z, or 0 through 9.

D-2.5.5   Removal or Installation of a TCI and/or Engine (type 6 record). For installed record, action taken must be E, Q, R, or U. For removal record, action taken must be P, R, or T.

D-2.6   Column F. How Malfunction Code. The How Malfunction code must be one contained in the current how malfunction code table. Also, see compatibility edits.

D-2.7   Column G. Units Completed. Units must be 00 through 99. Also, see compatibility edits.

D-2.8   Column H/I, Start Hour/Stop Hour, Day.

    a.   Start or stop hours at midnight must be 2400.

    b.   Start and/or stop hour must be 00 through 24.

    c.   Start and/or stop minutes must be 00 through 59.

    d.   Start and/or stop hour cannot be greater than 2400.

    e.   Total elapsed clock time cannot exceed 10 hours on a single record.

    f.   Day must be 001 through 366 and cannot be greater than the computer processing day. During January, December data will pass this edit (stop day 335 or greater).

D-2.9   Column J. Crew Size. Must be "0" through "9."   Also, see compatibility edits.

D-2.10   Column K. Category of Labor. Must be "1" through "6."

D-2.11   Column L. Command and/or Activity Identifier Code:

D-2.11.1   May be blank or any alpha-numeric activity identifier code when block 3 contains an equip-ID number.

D-2.11.2   For non-ID records, this field must contain a valid (owning command code).

D-2.12   Column N. EMPL-Number. Must contain 5-position employee number of person performing maintenance. Must be five numerics.

D-3   BLOCK 29 (REVERSE SIDE) (5 RECORDS).

    a.   Column A, FSC. Same as block 19. May not be blank.

    b.   Column B. Part No. Same as block 20.

    c.   Column C, WUC.

D-3.1   May be blank when block 3 contains an aircraft drone engine, or missile ID number.

D-3.2   Must contain five-position alpha-numeric for all other equipment.

D-3.3   When entered, must meet same criteria as column C (front side) WUC edits.

D-4   COMPATIBILITY EDITS, ON-EQUIPMENT, REC-ID-1.

D-4.1   If TM = "T" and HM = "799" or "804," the WUC, AT, WD edit is performed; otherwise, TCTO data code edit is performed.

D-4.2   If TM = "X" (R&D), then all positions of WUC, AT, WD may be alpha-numeric.

D-4.3   TCTO data code may be alpha-numeric in the first position and must be numeric in next six positions.

D-4.4   Package credit for periodic and/or phase inspection or complete bench check and/or test and/or repair of an engine (type 2 record):

D-4.4.1   When WUC = "033," "034," or "037" and units produced is "01" for the prime workcenter, start and/or stop time must be "0000" and crew size must be "0."

D-4.4.2   For engines, if AT = "A" through "D," or "1" through "9" ("X" with HM = "804"), then last two positions of WUC must be "00." May be "23BNO" or "23QAY" (for F16 aircraft).

D-4.4.3   If TM = "T," HM must be "793," "797," "798," "799," "801," "802," "804," or "911."

D-4.4.4   If HM = "793," "796," or "911," units, crew size, start time and stop time must be zeros.

D-4.4.5   If HM = "797," "798" or "801," units must be "01." Start and stop crew size cannot be zero.

D-4.4.6   If HM = "802," units must be "00," and labor hours cannot be "0."

D-4.4.7   If HM = "804," units must be "01" and and labor hours cannot be "0."

D-4.4.8   If AT = "T" or "U," HM must be "799" or "875."

D-4.4.9   If AT = "S," HM must be "800," "804," or "805."

D-4.4.10   If AT = "H," HM must be "672," "799," "812," or "948."

D-4.4.11   If AT = "Y," HM cannot be "672," "799," "800," "804," or "948" and the last position of the WUC must be zero.

D-4.4.12   If WUC = "04," TM must be "Q," "S," "X," or "Y."

D-4.4.13   If AT = "F," "G," "L," "Y," or "Z," HM cannot be "799."

D-4.4.14   If AT = "Q," HM cannot be "793," "796," "797," "798," "801," "802," or "911."

D-4.4.15   If AT = "P," "R," "S," "L," or "T," HM cannot be "750."

D-4.4.16   If HM - "800," AT must be "P," "Q," or "S."

D-5   COMPATIBILITY EDITS, OFF-EQUIPMENT, REC-ID-3.

D-5.1   If HM = "793," "796," "911," crew size start time, stop time, must be zero.

D-5.2   If AT = "A," "F," "G," "K," "L," "V," or "Z," HM cannot be "242," "796," "799," "800," "804," or "805."

D-5.3   If AT = "B" or "J," HM must be "672," "799," "812," or "948." D3

D-5.4   If AT = "X," HM must be "300-" "553-," "799," "804," "812," "948."

D-5.5   If AT = "M" or "N," HM cannot be "242."

D-5.6   If AT = "0," "1," "2," "3," "4," "5," "6," "7," "8" or "9," HM cannot be "799," "800" or "804."

D-5.7   If AT = "T" or "U," HM must be "799" or "875."

D-6   COMPATIBILITY EDITS, BITS AND PIECES.

D-6.1   TM cannot be T.

D-6.2   HM cannot be "793," "797," "798," "799," "800," "801," "802," "805," "911," or "948."

D-6.3   Quantity must be "01" through "99."

D-7   TYPE MAINTENANCE CODE TABLE GROUPS.

1. A, B, C, D, E, H, J, M, P, Q, R, S, T, X, Y.

2. A, B, C, D, E, H, K, L, Q, R, S, T, W, X, Y.

3. A, B, C, D, E, J, P, R, S, T, X.

4. A, B, D, F, J, P, R, S, T, X.

5. A, B, D, J, P, Q, R, S, T, X.

6. A, B, D, J, P, R, S, T, X.

7. A, B, F, H, J, P, R, S, T, X.

8. A, B, J, S, T.

9. A, B, J, R, S, T, X.

10. A, C, H, J, A, P, Q, R, S, T, W, X.

D-8   WHEN DISCOVERED CODE TABLE GROUPS.

11. A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q, R, S, T, U, V, W, Z, Y, 2, 3, 4, 5, 6.

12. A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q, R, S, T, U, V, W, X, Y.

13. A, B, C, D, E, F, G, H, I, J, L, M, N, P, Q, R, S, T, U, V, W, X, Y.

14. C, D, F, J, M, P, Q, R, S, T, U, V, W.

15. C, D, F, H, J, L, P, Q, R, S, T, U, V, W, Y.

APPENDIX E

ACTION TAKEN CODES

DEFINITION:

Action taken codes, when used in conjunction with work unit codes, How Malfunctioned codes, and When Discovered codes, identify a complete unit of work, a maintenance task, or action. Documentation on any type of repair, adjustment, cleaning, replacement or calibration of a WORK UNIT CODED item will contain the action taken code describing the actual work being performed on the work unit coded system. Codes applicable to CFAR documentation are marked with an asterisk.

CODE	DEFINITION
0-	Bench Checked -- NRTS Warranty Item: Repair not authorized, item under warranty.
*1-	Bench Checked -- NRTS (Not Reparable This Station) -- Repair not Authorized --Shop is not authorized to accomplish the repair. This code shall only be used when it is specifically prohibited by current technical directives. This code shall not be used due to lack of authority for equipment, tools, facilities skills, parts, or technical data.
2-	Text/Inspect -- NRTS -- Lack of Equipment, Tools, Skills, or Facilities -- Repair authorized but cannot be accomplished due to lack of equipment, tools or facilities. This code shall be used without regard as to whether the equipment, tools, or facilities are authorized or unauthorized. may be used for on-equipment when an end item ID is returned to depot.
3-	Bench Checked -- NRTS -- Due to Lean Logistics Policy. Repair could not be accomplished due to parts non-availability within the time limit imposed by Lean Logistics Policy.
4-	Bench Checked -- NRTS -- Lack of Parts -- Parts are not available to accomplish repair.
5-	Bench Checked -- NRTS -- Shop Backlog -- Repair cannot be accomplished due to excessive shop backlog.
6-	Bench Checked -- NRTS -- Lack of Technical Data -- Repair cannot be accomplished due to lack of maintenance manuals, drawings, etc., which describe detailed repair procedures and requirements.
7-	Bench Checked -- NRTS -- Lack of Equipment, Tools, Facilities, Skills, Parts or Technical Data -- Repair authorized but cannot be accomplished due to lack of authorization to obtain or posses required equipment, tools, facilities, skills, parts, or technical data.
*8-	Bench Checked -- Return to Depots -- Returned to depots by direction of system manager (SM) or item manager (IM). Use only when items that are authorized for base-level repair are directed to be returned to depot facilities by specific written or verbal communication from the IM or SM, or when items are to be returned to depot facilities for modification in accordance with a time-compliance technical order (TCTO), or as MDR exhibits.
9-	Bench Checked -- Condemned -- Item cannot be repaired and is to be processed for condemnation, reclamation or salvage. This code will also be used when a "Condemned" condition is discovered during field maintenance disassembly or repair.

A- Bench Checked and Repaired -- Bench check and repair of any one item is accomplished at the same time (also see code F).

B- Bench checked -- serviceable (for off-equipment work only) -- Item is bench checked and no repair is required. This code will be used when it is definitely determined that the discrepancy does not exist or cannot be replicated. Must be used with How Malfunction Code 672, 799, 812, or 948. Bench Check Serviceable (BCS) is the terminology for base-level action taken code B and Retest Okay (RTOK) is the terminology for depot-level action taken code B.

C- Bench checked-repair deferred -- Bench check is accomplished and repair action is deferred (See code F).

D- Bench checked-transferred to another base or unit -- Item is bench checked at a forward operating base, dispersed operating base, or enroute base and is found base for repair. Not used for items returned to depot for overhaul. Used also for PME or other equipment sent to another base/unit for bench check, calibration, or repair to be returned and for item forwarded to contractors on base level jobs.

E- Initial installation -- For installation actions not related to a previous removal action such as installation of additional equipment or installation of an item to remedy a ship-short condition. Must use with HOW MAL code 799.

*F- Repair -- Not to be used to code "On-Equipment" work if another code will apply. When it is used in shop environment, this code will denote repair as a separate unit of work after a bench check. Shop repair includes the total repair man-hours and includes cleaning, disassembly, inspection, adjustment, reassembly and lubrication of minor components incident to the repair when these services are performed by the same workcenter. For precision measurement equipment, this code will be used only when calibration of repaired item is required (See code G).

*G- Repairs and/or replacement of minor parts, hardware, and softgoods (seals, gaskets, electrical connectors, fittings, tubing, hose, wiring, fasteners, vibration isolators, brackets, etc.) -- Work unit codes do not cover most non-reparable items; therefore, when items such as those identified above are repaired or replaced, this action taken code will be used. When this action taken code is used, the work unit code will identify the assembly being directly related to parts being repaired.

H- Equipment checked -- no repair required (for "On-Equipment" work only) all discrepancies which are checked and found to require no further maintenance action. This code will be used only if it is definitely determined that a reported deficiency does not exist or cannot be duplicated. Must be used with HOW MAL code 672, 799, 812 or 948. Cannot Duplicate (CND) is the terminology for all on-equipment action taken code H maintenance actions.

*J- Calibrated -- no adjustment required -- Use this code when an item is calibrated and found serviceable without need for adjustment, or is found to be in tolerance but is adjusted merely to peak or maximize the reading. If the item requires adjustment to actually meet calibration standards or to bring in tolerance, use code K.

*K- Calibrated -- Adjustment Required -- Item must be adjusted to bring it in tolerance or meet calibration standards. If the item was repaired or needs repair in addition to calibration and adjustment, use code F.

*L- Adjust -- Includes adjustments necessary for safety and proper functioning of equipment such as adjust, bleed, balance, rig, fit, reroute, seat/reseat, position/reposition, program/reprogram, or actuating reset button, switch or circuit breaker. For use when a discrepancy or condition is corrected by these types of actions. If the identified component or assembly also requires replacement of bits and pieces as well as adjustment, enter the appropriate repair action taken code instead of L.

*M- Disassemble -- Disassembly action when the complete maintenance job is broken into parts and reported as such. Do not use for on-equipment work.

 N- Assemble -- Assembly action when the complete maintenance job is broken into parts and reported as such. Do not use for on-equipment work.

*P- Removed -- Item is removed and only the removal is to be accounted for. This instance delayed or additional actions will be accounted for separately (see codes Q, R, S, T, and U).

 Q- Installed -- Item is installed and only the installation action is to be accounted for (see E, P, R, S, T, and U).

*R- Remove and Replace -- Item is removed and another like item is installed (see codes T and U) and removal and/or replacement of subassemblies from their next higher assembly.

*S- Remove and Reinstall -- Item is removed and the same item reinstalled (see codes T and U). Must be used with HOW MAL code 800, 804 or 805. Not for serially tracked or TCI, see paragraph 7-4.

*T- Removed for Cannibalization -- A component is cannibalized. The work unit code will identify the component being cannibalized. Must be used with How Malfunction code 799 or 875.

*U- Replaced after Cannibalization -- This code will be entered when a component is replaced after cannibalization. Must be used with How Malfunctioned code 799 or 875.

*V- Clean -- Cleaning is accomplished to correct discrepancy and/or cleaning is not accounted for as part of a repair action such as code F. Includes washing, acid bath, buffing, sand blasting, degreasing, decontamination, etc. Cleaning and washing of complete items such as ground equipment vehicles, missiles, or airplanes should be recorded by utilizing support general codes.

 W- Non Destructive Inspection.

*X- Test-Inspection-Service -- Item is tested or inspected or serviced (other than bench check) and no repair is required. This code does not include servicing or used when documenting time against a Reported Discrepancy identifying a test, inspect or service toward a WUC item for On- and Off-Equipment maintenance which is unrelated to a CND action. Will be used when a Reported Discrepancy identifying a Deficiency toward a work unit code item is identified to be "Within Limits", with the appropriate no defect How Malfunction code. Will be used to document operational checks performed separately after a maintenance action in the same Job Control Number which is unrelated to a CND action. Will be used when testing items received from supply.

*Y- Troubleshoot -- Time expended in locating a discrepancy is great enough to warrant separating the troubleshoot time from the repair time. Use of this code necessitates completion of two separate line entries, or two separate forms, one for the troubleshoot phase and one for the repair phase. When recording the troubleshoot time separate from the repair time, the total time taken to isolate the primary cause of the discrepancy should be recorded utilizing the work unit code of the defective item or assembly. If the discrepancy was not isolated, the subsystem or system work unit code should be used.

*Z- Corrosion Treatment -- Includes cleaning, treating, priming, and painting of corroded or repaired components and deteriorated coatings. This code should always be used when actually treating corroded items or those with deteriorated paint. The item that is corroded or has damaged paint will be identified by the work unit code (also see support general code 09000).

APPENDIX F

TYPE MAINTENANCE DESIGNATORS

DEFINITION:

Identifies the type of work that is performed.

Not applicable to users of CFAR.

Notes:

1.   The definitions contained in this table are for all types of equipment, except as noted on each code.
2.   Selected type maintenance codes for research and development projects assigned in AFMC directives will be used with equipment classification code prefix P.
3.   Accomplishment of unscheduled inspection actions performed as part of repair will be considered part of the total action, i.e., action taken code F, G, etc.

CODE	DEFINITION
A-	Service: Includes all units of work associated with servicing, cleaning, and movement of equipment.
B-	Unscheduled Maintenance: Includes all units of work accomplished between scheduled inspections, excludes TCTO accomplishment.
	ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Field Maintenance (JEBM): Includes all work required on an engine removed because of a failure or malfunction.
C-	SHOP WORK - Manufacture and/or fabrication of aerospace vehicle components, aerospace ground equipment, ground C-E and RPIE.
	TYPE MAINTENANCE CODES FOR ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Build-Up: Includes all work required during build-up of an engine from supply stock
	TYPE MAINTENANCE CODES FOR AIR LAUNCHED MISSILES AND RELATED AGE AND TRAINING EQUIPMENT - Basic Postflight: Includes all units of work accomplished during all phases of an hourly Postflight inspection.
	INSTALLED ENGINES AND RELATED MOBILE TRAINING SETS - Basic Postflight, Thruflight or Alert Exercise Postflight Inspection: Includes all units of work accomplished during all phases of the basic Postflight, Thruflight or Alert Postflight inspection.
D-	Scheduled Inspection: Includes all units of work accomplished during scheduled inspections such as daily, safety, and servicing inspection, excluding periodic/phased inspection.
	INSTALLED ENGINES AND RELATED MOBILE TRAINING SET - Preflight, Combined Preflight/Postflight, or End of Runway Inspection: Includes all units of work accomplished during all phases of Preflight, combined Preflight/Postflight, or End of Runway Inspection.
	ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Tear-Down and Preparation for Shipment: Includes all work required to tear-down and prepare a failed or time-expired engine for shipment excluding periodic/phased inspection.

CODE	DEFINITION

E- Hourly Postflight or Minor Inspection: Includes all discrepancies not workcard related, and all units of work accomplished during all phases of an hourly or minor (Isochronal) inspection.

ENGINE SHOP WORK ON REMOVED ENGINES - Unscheduled Test Cell Operation: To be used when the engine is removed for test cell operation and the removal was made for reasons other than a scheduled inspection or JEBM, i.e., directed removals or accessory replacement. All other test cell operations will be charged to the appropriate work order prefix.

F- GROUND LAUNCHED MISSILES, RELATED AGE, GROUND CEM, RPIE, TRAINING EQUIPMENT - Scheduled Ground-Launched Missile Maintenance: Excludes scheduled inspection. Includes all units of work.

GROUND CEM, COMSEC AND GROUND CEM "L" SYSTEMS (EXCEPTING GROUND-LAUNCHED MISSILE CEM) - Daily/Shift/Phase/Periodic: Includes all units of work accomplished during daily/shift/phased/periodic inspections. This code will be used on both the "Look" phase of the inspection and on all "Fix" phase documents generated for correction of deficiencies noted during the inspection accomplished during initial receipt and assembly, transportation to launcher, mating to launcher, checkout of missile on launcher, checkout to readiness condition, and the same functions involved in recycling the missile to and from a periodic inspection and return to launcher.

G- Transport: Includes all units of work performed by activities in recording aircraft and equipment transportability (to be used with action codes "P" and "Q"). This code should be used in conjunction with the tear-down and build-up of aircraft and equipment being transported by air, land and sea.

H- SHOP WORK - Maintenance of non-aerospace equipment received from activities other than maintenance.

INSTALLED ENGINES AND RELATED MOBILE TRAINING SETS - Home Station Check: Includes all units of work accomplished during all phases of a home station (Isochronal) inspection.

ENGINE SHOP WORK ON REMOVED ENGINES - Reciprocating Engine Build-Ups: Includes all work required during build-up of reciprocating engines drawn from supply stock.

GROUND CEM, COMSEC, AND GROUND CEM "L" SYSTEMS (EXCLUDING GROUND-LAUNCHED MISSILE CEM) - Emergency On-Site Repair: Includes all units of work authorized and accomplished as a result of an emergency request for assistance. Applicable to all levels of maintenance performed by AFCS engineering and installation teams and organizational and intermediate maintenance performed by AFMC mobile depot activity (MDA) teams. Excludes accomplishment of TCTOs.

J- Scheduled calibration of equipment or components, including all units of work accomplished concurrently with a scheduled calibration.

K- SHOP WORK - Manufacture and/or fabrication of non-aerospace equipment.

ENGINE SHOP WORK ON REMOVED ENGINES - Reciprocating Engine Tear-Down and Preparation for Shipment: Includes all work required to tear-down and prepare a failed or time- expired engine for shipment when repair cannot be accomplished on base.

L- ENGINE SHOP WORK ON REMOVED ENGINES - Reciprocating Engine Field Maintenance: To be used for repair of an engine removed from aircraft when the engine will be the same, or another aircraft.

M- Interior Refurbishment: Includes all work accomplished during interior refurbishment of aircraft.

CODE	DEFINITION

P- Periodic or Phased Inspection/Maintenance: Includes all discrepancies not workcard related, and all units of work accomplished during look-and-fix phases of per inspections, scheduled maintenance, and time-change items. Excluding accomplishment of TCTOs.

SHOP WORK - Inspection, repair, maintenance and service of life-support (personal) equipment and flotation equipment such as parachutes, oxygen masks, flight clothing, life vests and rafts. Excludes accomplishment of TCTOs.

Q- Forward-Support Spares: Includes all units of work performed by all activities in recording in-shop maintenance actions on AMC forward-support spares, excluding accomplishment of TCTOs.

R- Depot Maintenance: Includes all units of work accomplished when depot maintenance or rehabilitation is performed, regardless of location includes emergency on-site repair. Excludes accomplishment of TCTOs.

S- Special Inspection: Includes all units of work accomplished during all phases of special inspections. Excluding accomplishment of TCTOs.

GROUND CEM, COMSEC, AND GROUND CEM "L" SYSTEMS (EXCLUDING GROUND-LAUNCHED MISSILE CEM) - This code will also be used for correction of deficiencies noted during the special flights.

T- Time-Compliance Technical Order: Includes accomplishment of all TCTOs and status reporting.

W- ENGINE SHOP WORK ON REMOLD ENGINES - Minor Maintenance: Performed on engines ("Short-Time Spares") removed to facilitate airframe TCTO; extensive aircraft stru limits due to untimely receipt of part, nonavailability of required equipment, work priority, etc., reconciliate airframe and engine time for alignment of periodic/phase inspections; and to record man-hours expended in repair (minor maintenance) of engines for which minor repair (other than and not to include JEBM) could not be accomplished.

SHOP WORK - Special Support and Compliance with 00-20K Series Technical Orders: Includes inspection, testing checking, preservation, and/or packaging of serviceable items from base supply, or enroute- or flyaway-kit items.

X - Research and Development.

Y- Aircraft/Engine Transient Maintenance: Include all units of work accomplished on/or for transient aircraft/engines, including non-Air Force. Excluding accomplishment of TCTOs.

Z- This code will be used only for Reliability Improvement Warranty (RIW) items and for equipment managed under the Advanced Configuration Management System (ACMS).

APPENDIX G

HOW MALFUNCTION CODES

HOW MALFUNCTION DESIGNATORS FOR OTHER THAN CONVENTIONAL MUNITIONS

<u>DEFINITION:</u>

Indicates how or why a piece of equipment malfunctioned (flame-out, cracked, air in system, compression low, etc.). Detailed description, including test results, BIT readouts, measurements and observations should be placed in the narrative portion of the MDC record.

<u>TYPE DEFECT:</u>   Type 1 - Inherent, an actual failure of the item.

                      Type 2 - Induced, the failure of the item was caused by an outside influence.

                      Type 6 - No defect, no actual failure.

Not applicable to users of CFAR.

CODE	TYPE DEFECT	DEFINITION
001	1	Faulty Tube, Transistor, or Integrated Circuit
002	6	Servicing (may be used with WUC items).
006	1	Contacts, Connectors or Connections Defective
008	1	Noisy/Chattering
011	1	Low-Frequency Vibrations
012	1	Medium-Frequency Vibrations
013	1	High-Frequency Vibrations
020	1	Cut, Worn, Chaffed, Frayed, or Torn
025	1	Capacitance Incorrect
028	1	Conductance Incorrect
029	1	Current Incorrect
037	1	Fluctuates, Unstable, or Erratic
038	6	Repair deferred, awaiting parts, PMEL only.
039	6	Repair deferred, awaiting Calibration Procedure Tech Order, PMEL only.
040	6	Repair deferred, awaiting base Calibration Standard, PMEL only.
041	6	Repair deferred, awaiting other support equipment, PMEL only.
042	6	Repair deferred, awaiting facility temperature, PMEL only.
043	6	Repair deferred, awaiting facility humidity, PMEL only.
044	6	Repair deferred, workload backlog, PMEL only.
045	6	Battery Replaced, No Other Fault
051	1	Fails to Tune or Drifts
064	1	Incorrect Modulation
065	1	High Voltage or Standing Wave Ratio
069	2	Flameout
070	1	Broken
080	1	Burned Out or Defective Lamp, Meter or Indicating Device
086	2	Improper Handling, Shipping or Maintenance Damage
088	1	Incorrect Gain
103	1	Attack Display Incorrect
105	2	Loose, Damaged, or Missing Hardware (nuts, bolts, screws, clamps, safety-wire, etc.)

CODE	TYPE DEFECT	DEFINITION
111	1	Burst or Ruptured
127	1	Adjustment or Alignment Improper
135	1	Binding, Stuck, or Jammed
136	1	Damaged/Cracked Fan Stator Case
137	1	Damaged/Cracked Fan Stator Vanes
138	1	Fan Blade Damage
139	1	Cracked or Warped Inlet Guide
140	1	Frozen Fan
141	1	Compressor Case Failure or Excessive Air Leakage
142	1	Compressor Damage Due to Failure or Seizures
143	1	Damaged/Cracked Compressor Case
144	1	Compressor Rotor Change (other than FOD)
145	1	Cracked Diffuser Cases
146	1	Combustion Case Burn or Hot Spot
147	1	Combustion Damage
148	1	Damaged/Cracked Turbine Frame/Case (Burned Through)
149	1	Flameholder or Fuel Ring/Bars Damaged
150	1	Thrown, Damaged or Failed Buckets
151	1	Turbine Wheel Failure
152	1	Turbine Nozzle Failure
153	1	Turbine Damage Due to Material Failure
154	1	Engine or Afterburner Fire Damage
155	1	Engine to A/C Mount Failure
156	1	Afterburner or Augmentor Problem Repair
157	1	Thrust Reversor System Failure
158	1	Accessory Drive Gear Box Failures (Includes turboprop gearbox) (Worn splines)
159	1	Internal Reduction Gear Failure
160	1	Bearing and/or Support Failure
161	1	Bearing Failure (Causing rotor shift/seizure)
162	1	Scavenger Pump Failure (Includes turboprop gearbox)
163	1	Engine Decoupled (Turboprop)
164	1	Propeller Brake Failed (Turboprop)
165	1	Power Section Failure (Turboprop)
166	1	Reduction Gear Box Failure (Turboprop)
167	2	Tension or Torque Incorrect
168	1	Torque Meter Failure (Turboprop)
169	1	Voltage Incorrect
170	1	Corroded Mild/Moderate
171	1	Impeller or Inducer Damage (Recip only)
172	1	Slipped Blower Clutch (Recip only)
173	1	Turbo Supercharger Failure (Induction system contaminated with metal from turbo) (Recip only)
174	1	QEC Discrepancy
175	1	Condition Monitoring-Adverse EGT/TIT Trend

CODE	TYPE DEFECT	DEFINITION
176	1	Condition Monitoring-Adverse RPM Trend
177	1	High or Low Fuel Consumption
178	1	Condition Monitoring-Vibration Trend
179	1	Condition Monitoring-Exhaust Pressure Ratio (EPR) Trend
180	1	Condition Monitoring-Adverse Oil Consumption Trend
181	1	Condition Monitoring-Adverse Fuel Flow Trend
182	1	Condition Monitoring-Performance trend indicates compressor section deterioration or damage.
183	1	Condition Monitoring-Performance trend indicates combustion section deterioration or damage.
184	1	Condition Monitoring-Performance trend indicates turbine section deterioration or damage.
185	1	Condition Monitoring-Performance trend indicates accessory section deterioration.
186	1	Condition Monitoring-Removed for further test cell diagnostic check
187	1	Condition Monitoring-Borescope indicates compressor section deterioration.
188	1	Condition Monitoring-Borescope indicates combustion section deterioration.
189	1	Condition Monitoring-Borescope indicates turbine section deterioration.
190	1	Cracked
191	1	High EGT
192	1	Over Temperature
193	1	Excessive Stalls
194	1	High Breather Pressure
195	1	Exceeding Quality Check Temperature Limit
196	1	Excessive Oil From Breather, or High Sump Pressure
197	1	Fuel Leakage
198	2	Contaminated Fuel
199	1	High or Low Oil Consumption
200	1	Oil Leakage
201	2	Contaminated Oil
202	1	Low Oil Pressure
203	1	High Oil Pressure
204	1	Smoke or Fumes in Cockpit
205	1	Start or Off Idle Stagnation
206	1	Steady State Stagnation
207	1	Augmentor Induced Stagnation
208	1	Augmentor Nozzle Mechanism Deterioration
209	1	Internal Noise on Shutdown/Start
210	2	Servicing With Improper Grade or Type of Fuel or Oil
211	2	Corroded Internal Surfaces
212	2	Corroded External Surfaces
213	1	Low Compression (Recip Only)
214	1	Blow By or Detonation (Recip Only)
215	1	Manifold pressure beyond limits, overboost (Recip only).
216	1	Low Manifold Pressure (Recip Only)

CODE	TYPE DEFECT	DEFINITION
217	1	Oil in induction system or compressor section (Recip only).
218	1	Sudden Stoppage or Reduction or Exceeded Torque Limits (Recip/Turboprop Only)
219	1	Internal Failure (Recip Only)
220	1	Loss of Torque (Recip Only)
221	1	Will not carry load (APU).
222	1	Engine Shuts Down After Start (APU).
223	1	Control System Component Malfunction
224	1	Backup/Emergency Control System Failure
225	1	Bleed Air Malfunction
226	1	Engine Start Time Beyond Limits
227	1	Rear Compressor Variable Vane (RCVV) Geometry Improper/Axial Flutter
228	1	Compressor Inlet Variable Vane (CIVV) Geometry Improper
230	2	Dirty, Contaminated, or Saturated by Foreign Material
231	1	Augmentor Blowout
232	1	Augmentor No Light
233	1	Augmentor Rumble
234	1	Turbine Bore Fire
242	1	Failed to Operate - Specific Reason Unknown.
253	1	Misfires
254	1	No Output
255	1	Incorrect Output
277	1	Fuel Nozzle/Oil Line Coking
279	1	Spray Pattern Defective
290	1	Fails Diagnostic/Automatic Test
300	6	Foreign Object - No Damage
301	2	Foreign Object Damage (FOD)
303	2	Damage By Semi-Solid Foreign Object (Birds)
305	2	Equipment or Material Physically Damaged
306	1	Equipment or Material Physically Failed
307	1	Composite Material Defective
308	1	Improper Operation
309	1	Electrical Measurements Incorrect
310	1	Incorrect Navigation Measurement
311	1	Damaged or Defective Component (Bulb, Transistor, Integrated Circuit, Fuse, etc.)
312	1	Degraded System Performance
314	1	Inability to Accelerate, All Power Settings Above Idle.
315	1	Surges/Fluctuates
317	1	Hot Starts
334	1	Temperature Limits Exceeded
350	1	Insulation Breakdown
372	1	Metal in Sump/Screen or on MAG Plug
377	1	Leaking - Class A - Slow Seep (TO 1-1-3)
378	1	Leaking- Class B - Seep (TO 1-1-3)

CODE	TYPE DEFECT	DEFINITION
379	1	Leaking - Class C - Heavy Seep (TO 1-1-3)
380	1	Leaking - Class D - Running Leak (TO 1-1-3)
381	1	Leaking Internal or External
383	1	Lock on Malfunction
410	1	Lack of, or Improper Lubrication
425	1	Pitted, Nicked, Chipped, Scored, Scratched, or Crazed
450	1	Open
457	1	Oscillating
458	1	Out of Balance
464	1	Overspeed
472	1	Fuse Blown or Defective Circuit Panel/Breaker
475	1	Inability to Start, Ground or Air
476	2	Damage By Solid Foreign Objects (Metal, Stone)
477	2	Damage By Semi-Solid Foreign Object (Ice)
478	2	Damage By Semi-Solid Foreign Objects (Rags, Plastics, Rubber, etc.)
479	2	Damage from Simulated Combat (Air to Air/Air to Ground)
480	2	Damage by Aircraft Accident or Incident
481	2	Exposure to Fire Extinguishing Agent
482	2	Excessive "G" Force Inspection
483	6	Dummy Engine Transaction
484	1	Blade Shingling
513	1	Compressor Stalls (Afterburner)
525	1	Pressure Incorrect/Fluctuates
537	1	Low Power or Thrust
553	2	Does Not Meet Specifications, Drawing, or Other Conformance Requirements (Use with "when discovered" code Y).
561	1	Unable to Adjust to Limits
567	1	Resistance Incorrect
580	1	Temperature Sensitive
583	1	Scope Presentation Incorrect or Faulty
585	1	Sheared
599	1	Travel or Extension Incorrect
602	2	Failed or Damaged Due to Malfunction of Associated Equipment
607	1	No-Go Indication
609	1	Out of Track/Fails to Track
611	1	Set Clearance Plane Violation
615	1	Shorted
622	2	Wet/Condensation
625	1	Gating Incorrect
626	1	Inductance Incorrect
627	1	Attenuation Incorrect
631	1	Gyro Bias Voltage Incorrect
632	6	Expended (Thermal Battery, Fire Extinguisher, etc.).
635	1	Sensitivity Incorrect
637	1	Triggering Incorrect

CODE	TYPE DEFECT	DEFINITION
644	1	Built-in Test (BIT) Indicated Fault
649	1	Sweep Malfunction
651	1	Air in System
652	1	Align Time Excessive
653	1	Ground Speed Error
654	1	Terminal Error - CEP Excessive
655	1	Terminal Error - Range Excessive
656	1	Terminal Error - Azimuth Excessive
657	1	Distance Measurement Error (Navigation Equipment)
658	1	Bearing/Heading Error (Navigation Equipment)
667	1	Corroded Severe
669	1	Potting Material Melting (Reversion Process)
670	1	Erroneous Over "G" Indicator
672	6	Built In Test (BIT) False Alarm
673	1	Bit Fault Indicator Failure
674	1	Bit Fault Indicated Wrong Unit
675	1	BIT Fault Not Duplicated, Parameters Confirmed by Data
676	6	BIT Fault Not Duplicated on Ground, Parameters Do Not Confirm Fault
690	1	Excessive Vibration or Rough Operation
691	1	Video Out of Focus
692	1	Video Faulty
693	1	Audio Faulty
694	1	Weak Video
695	1	Sync Absent or Incorrect
698	2	Faulty Card, Tape, Program, or Disk
710	1	Bearing Failure or Faulty
718	1	Improper Response to Mechanical Input
721	1	Improper Response to Electrical Input
730	1	Loose
731	2	Battle Damage
750	1	Missing
752	1	Tape Missing/Defective
753	6	Tape Removal to FOM
754	1	Fairing Compound Missing/Defective
755	1	Gap Filler Missing/Defective
756	1	Blade Seals Missing/Defective
757	1	Outer Mold Line (OML) Paint, Coating Missing/Defective
780	1	Bent, Buckled, Collapsed, Dented, Distorted, or Twisted
782	1	Tire Tread Area Defective
783	1	Tire Sidewall Damaged or Defective
784	1	Tire Bead Area Damaged or Defective
785	1	Tire Inside Surface Damaged or Defective
786	6	No Defect - Tire Tread Normal Wear
787	6	No Defect - Brake Adjustment Normal Wear

CODE	TYPE DEFECT	DEFINITION
793	6	No Defect - TCTO Kit Received by Base Supply or Parts Are Available in Supply.
796	6	No Defect - TCTO Not Applicable: This is an error code used to tell the IM/SM that this specific piece of equipment should not have been included in the TCTO. This code is not to be used to report compliance.
797	6	No Defect - TCTO previously complied with.
798	6	No Defect - TCTO complied with by record check or inspection. No modification required.
799	6	No Defect
800	6	No Defect - Component removed/reinstalled to facilitate other maintenance (includes disconnect/connection of electrical wires, hydraulic lines, etc.).
801	6	No Defect - TCTO complied with, all applicable operations completed.
802	6	No Defect - Partial TCTO compliance.
804	6	No Defect - Removed for scheduled maintenance, modification or reliability assessment.
805	6	No Defect - Pre/Post Alert Reprograming
806	6	No Defect - Routine/Emergency/Special Reprograming
808	6	No Defect - "B" Plug Combination Change
812	6	No Defect - Indicated Defect Caused By Associated Equipment Malfunction
813	6	No Defect - Indicated Defect Caused by Associated Software/Key Code Failure
816	1	Impedance Incorrect
824	1	Gyro Precesses
842	1	Voids, (Composites Structure)
843	1	Unbonded Defects in Bonded Joint (All Structures)
844	1	Hole Wear, Out of Round (Composite Structures)
846	1	Delaminated; Separation of Laminated Layers (Composite Structure)
847	1	Abrasions, Erosion, Pits (Composites)
848	1	Missing and Loose Fibers (Composites)
849	1	Chemical Imbalances (Composites)
865	1	Deteriorated (For protective coating/sealing defective; use with action taken code Z.)
866	6	Expiration of maximum time, (TO directed).
867	6	Transfer Time Limit (TO 2-1-18)
868	6	Removed/rolled back for failed external engine component reinstalled in same aircraft.
870	6	Removal for Research, Test, or Diagnostic Event
872	6	Removal During Aircraft Programmed Depot Maintenance
874	2	Storage Damage or Deterioration
875	6	Removal for or Replacement after (Cannibalization)
876	6	Non-Technical Order Directed Removal/Removal for Reconfiguration
877	6	TO-Identified Components
878	6	Removal to perform scheduled/special inspection (PE, HSI, etc., - TO-directed).
879	6	Expiration of maximum cycles/sorties for engines, modules or components (TO-directed).

CODE	TYPE DEFECT	DEFINITION
880	6	Opportunistic maintenance removal (modules and tracked components approaching TO limits).
881	6	Removal to Perform Minor Inspection (Borescope - TO-directed)
884	1	Lead Broken
890	2	Lightning Strike Damage
900	1	Burned or Overheated
901	1	Intermittent
911	6	TCTO not complied with, TCTO complied with in error, or placed in work in error.
916	1	Joint Oil Analysis Program (JOAP) Removal
917	1	Impending Failure or Latent Defect Indicated by NDI
921	6	No Defect. Item Has Been Rebuilt, Refurbished, been replaced (consumable item) or Has Had Parts Replaced Because of Technical Order (Time Change) Requirements (To be used with Action Taken repair code G, or R, P, and Q for Time Change).
932	1	Does Not Engage, Lock, or Unlock Correctly.
939	1	Unable to Load Program
941	1	Non-programmed Halt
942	2	Illegal Operation or Address
943	1	Data Error
944	6	Update or Verification of Program/Software Load
948	2	Operator Error
949	1	Computer Memory Error/Defect
956	1	Computer Equipment Malfunction
957	1	No Display
959	1	Fails to Transfer to Redundant Equipment
962	1	Low Power (Electrical)
964	1	Poor Spectrum
969	1	Cannot Resonate Input Cavity
972	1	Damaged Probe
974	1	Does Not Track Tuning Curve
982	1	Frozen Tuning Mechanism
987	1	Input/Output Pulse Distortion
988	1	Loss of Vacuum
989	1	Low Coolant Flow Rate
991	1	Frequency Out of Band, Unstable, or Incorrect
995	1	EMP Protection Material Defective
996	1	Radar Absorption Material Defective

APPENDIX H

WHEN DISCOVERED CODES

DEFINITION:

Indicates when a need for maintenance was discovered (receiving/shipping/storage inspection, during load, calibration, mating, inflight, alert, scheduled inspection, etc). Not applicable to users of CFAR.
NOTE: Each code may have more than one definition, depending on the group of systems under mainte-
nance. Following each code is a letter in parenthesis that identifies the systems it can be used with.

(A) AIRCRAFT, DRONES, AND AIR LAUNCHED MISSILES

(B) CONVENTIONAL AND NUCLEAR MUNITIONS

(C) GROUND CEM, TRAINERS AND AGE

(D) GROUND LAUNCHED MISSILE WEAPON SYSTEMS

CODE	DEFINITION
1-	Magnetic Particle. (A)
2-	During Operation of Malfunction Analysis and Recording Equipment or Subsequent Analysis. (A)
3-	Eddy Current. (A)
A-	Before Flight Abort. (A) -Receiving inspection (general inspection and test) (B) -Countdown--Abort: This code applies to System Readiness Check (SRC) for countdown for actual launch which results in a no-go condition; not applicable Minuteman exercises; this code is applicable to countdown for actual launch such as training or verification launches of all missiles. (D)
B-	Before Flight - No Abort. (A) -Shipping inspection (general inspection and tests). (B) -Countdown--No Abort: This code applies to discrepancies discovered as specified for code "A" when the discrepancy(s) does not cause the launch or exercise to be aborted. (D).
C-	In-Flight - Abort. (A) -During operation. (B) -During equipment operation/caused equipment down time. (C) -Simulated Countdown--Abort: This code applies to the missile commanded calibrate, sixty second test or Sensitive Command Network (SCN) Test for Minuteman; and missile and/or launch verification test for Titan II. when the discrepancy(s) discovered during these exercises caused the exercise to be aborted. (D)
D-	In-Flight - No Abort. (A) -Returned munitions inspection tests). (B) -During equipment operation/did not cause equipment down time. (C) -Simulated Countdown--No Abort: This code applies to discrepancies discovered as specified for code "C" when the discrepancy(s) does not cause the exercise to be aborted. (D)
E-	After Flight. (A) -Storage monitoring inspection. (B) -Post Launch/Refurbish Maintenance: Use for those discrepancies discovered during refurbishment of a launch after missile launch. (D)

CODE   DEFINITION

F-   Between Flight --Ground (crew (When not associated with an inspection). (A)
        -Unscheduled Maintenance: Use for discrepancies during phases of operational maintenance
        not covered by other when discovered codes. (B) (C) (D)

G-   Ground Alert/Operationally Ready--Not Degraded:
        Use for discrepancies discovered while the weapon system is in an operationally ready/alert
        status and the discrepancy operationally ready/alert degradation; do not use this code for
        discrepancies discovered during maintenance/exercise covered by codes B, D, J, N, P, Q, R, T,
        or V. (A) (B) (D)

H-   Thru-Flight Inspection. (A)
        -Post load. (B)
        -Scheduled inspection CEM phase or periodic (does not include daily/shift). (C)
        -Ground Alert/Operationally Ready--Degraded: Use for discrepancies discovered while the
        weapon system is in an operationally ready/alert status and the discrepancy(s) caused opera-
        tionally ready/alert degradation; do not use this code for discrepancies discovered during main-
        tenance/exercises covered by codes A or C. (D)

J-   Preflight Inspection. (A)
        -Daily Inspection/Shift Verification: Use for discrepancies discovered during the performance
        of regularly scheduled daily inspections or during shift verification, or inspections conducted
        during change of missile combat crews. (B) (C) (D)

K-   Hourly Postflight Inspection. (A)
        -Before load. (B)

L-   During Training or Maintenance on Training Equipment. (A)
        -During training or maintenance on equipment utilized in a training environment (Use only for
        Class II training equipment). (B) (C) (D)

M-   Phased/Scheduled/Periodic Inspection: Use for discrepancies discovered during the perform-
        ance of inspections specified by the Dash-6 Technical Order except Dash-6 Calibrations (See
        Code T). (A) (B) (D)
        NOTE, for countdowns (See Codes A and B), and Simulated Countdowns (See Codes C and D).
        (D)

N-   Ground Alert - Degraded. (A)
        -During load. (B)
        -Functional/Operation Check--Result "Good": Use for discrepancies discovered during perform-
        ance of a functional/operational check and the discrepancy(s) did not cause the overall result of
        the check to be "Bad"; do not use this code for discrepancies discovered when checks are
        performed as a part of maintenance/exercises covered by codes B, D, J, M, or V. (D)

P-   Functional Check Flight. (A)
        -Functional/Operational/Systems check. (B) (C)
        -Functional/Operational Check--Result "Bad": Use for discrepancies discovered during per-
        formance of a functional/operational check when the discrepancy(s) caused the result to be
        "Bad"; do not use this code for discrepancies discovered when checks are performed as part of
        maintenance/exercises covered by codes A, B, C, D, G, H, J, M, T, or V. (D)

Q-   Special Inspection: Use for discrepancies discovered during the performance of "Special" or
        "One Time" inspections directed by local or higher authority including those directed by the
        "Special Inspection" portion of the Dash-6 Technical Order (Excluding Minuteman launch Ca-
        pability Test). (A) (B) (C) (D)

CODE   **DEFINITION**

R-   Quality Control Check: Use for all discrepancies discovered by quality control personnel during any phase of maintenance/operation. (A) (B) (C) (D)

S-   Depot Level Maintenance: Use only for discrepancies discovered during maintenance performed at AFMC activities (including SRA's) and those discrepancies discovered during depot level maintenance performed "On Location" such as compliance with depot level TCTOs and modification programs by depot/contractor personnel; support base civil engineer shops may use this code when performing "Depot Level" category maintenance/repair/overhaul on missile weapon system RPIE. (A) (B) (C) (D)

T-   During Scheduled Calibration: Use only for discrepancies discovered during calibration actions directed by appropriate technical directives to be accomplished on a periodic/recurring basis. (A) (B) (C) (D)

U-   Oil Analysis. (A)
    -Non-destructive inspection. Includes optical, penetrant, magnetic particle, radiographic, eddy current, ultrasonic, spectrometric oil analysis, etc. (B) (C) (D)

V-   During Unscheduled Calibration: Use for discrepancies discovered during calibrations actions not covered by code T. (A) (B) (C) (D)

W-   In-Shop Repair and/or Disassembly for Maintenance: Use of this code is restricted to discrepancies discovered while an item is under going "In-Shop" bench check and/or repair; use code "F" for repair and/or disassembly actions performed "On-Equipment" when these actions are not part of an action covered by one of the other codes. (A) (B) (C) (D)

X-   Engine Test Stand Operation. (A)
    -Mating/De-mating (warhead/clip-in, basic assembly/shape components). (B)
    -Engine Test Stand Operations: Use for discrepancies discovered during portable test stands or cell operation. (D)

Y-   Upon Receipt or Withdrawal from Supply Stocks: Use for discrepancies discovered during bench check or installation on items received from AFMC depots, contractors, SRA's and/or supply stocks; this code is intended to pinpoint items which are classed as "Serviceable" at time of issue and later proved to be "Unserviceable." (A) (B) (C) (D)

Z-   AGM Under Wing Check. (A)
    -During initial equipment installation. (C)
    -Minuteman Launch Capability Test: Use for discrepancies discovered during performance of Minuteman Launch Capability Test. (D)

APPENDIX I

SUPPORT GENERAL CODES

NOTE

- System Program Managers, MAJCOMs, and local commanders may add additional lower level codes to 01000, 02000, 05000, 06000, 07000, and 09000 to track specific actions under the category definition. However, data transmitted up channel is rolled up to the two-digit level. Categories 03000 and 04000 will remain standardized as listed in this appendix. Note that some codes have more than one definition. HQ AFMC/ENB is OPR for these codes.

- Generally speaking, Master Job Standard Numbers will replace Support General codes. As CAMS and G081 units convert MJSNs, or to the Integrated Maintenance Data System, SG code reporting will be discontinued except where directed by MAJCOM or local procedures. table

CODE	DEFINITION
01000	Ground handling, servicing, and related tasks

Ground handling

Equipment moving or repositioning
Installation/relocation of equipment
Removal of equipment
Mission equipment operation or support when not associated with scheduled or
    unscheduled maintenance

Servicing and related tasks

Scheduled power changeover
Troubleshooting end items or facilities (use only for end items or facilities that do not have
    a WUC assigned)
Unscheduled power changeover
Power production service and checkout
Environmental control
Rehabilitation of antenna systems
Unscheduled antenna system service
Clearing of antenna/transmission right-of-way
Installation of new antenna system
Receiver or transmitter frequency changes
Tape development, reproduction and analysis
Telephone number change
Rehabilitation of equipment

02000	Equipment and facility cleaning

Washing or degreasing
Cleaning and treating equipment to prevent corrosion
Ground snow, frost, and ice removal
Cleaning antenna systems, mobile facilities and fixed facilities
Decontamination

CODE	DEFINITION
03000	Scheduled inspection or maintenance
03100	Preflight inspection Receiving Inspection (includes assembly) Prior to use inspection As required (other than as specified below) Daily inspection
03101	End of runway check
03107	7 day interval
03111	Service inspection
03112	6 month Acceptance
03113	Annual Incoming (entering shop)
03114	14 day
03115	Shipping Final (leaving shop)
03121	21 day
03128	28 day interval
03130	In-storage inspection
03142	42 day
03156	56 day
03184	84 day
03200	Basic postflight/thruflight inspection, as applicable Postflight/down load inspection Installation (do not use for missile to launcher installation)
03209	Alert exercise postflight
03210	Basic postflight/end of day inspection
03215	Combined preflight/postflight inspection
03220	7-day calendar inspection
03221	14-day calendar inspection
03268	168 day

CODE	DEFINITION
03300	Hourly postflight inspection Storage inspection (live) Pre-launch
03305	25-hour engine inspection
03310	50-hour engine inspection
03311	100-hour engine inspection
03312	200-hour engine inspection
03313	400-hour engine inspection
03314	300-hour engine inspection
03320	30 day
03330	90 day
03336	336 day
03340	60 day interval
03360	120 day interval
03370	180 day interval
03380	270 day interval
03390	360 day interval
03395	540 day interval
03400	Periodic inspection/phase inspection, basic phase Storage inspection (dead) 720 day interval
03510	15 day
03580	Armament test equipment
03596	720 day/2 year
03597	900 day
03600	Look phase of programmed depot maintenance (PDM) Post-launch/static firing
03700	Storage
03710	Major inspection

CODE	DEFINITION
03720	Minor inspection
03730	Home station check
03750	Cannibalization Aircraft (Status reporting only)
03755	Cannibalization Recovery (Status reporting only)
03800	Re-entry vehicle recycle
03802	Re-entry vehicle recycle for higher headquarters evaluation
03803	Re-entry vehicle recycle for time compliance technical order (TCTO)
03804	Re-entry vehicle for limited life component/technical critical item (LLC/TCI) replacement
03806	Disassembly for operational test/follow-on operational test (OT/FOT)
0311K	Armament
0311L	Shelter maintenance
0311M	Ramjet
0311N	Missile maintenance
0311P	Missile interface unit (MIU)
0311R	Fueling
0311S	Disassembly
0311T	SMATE
0311U	IMSOC
0341A	Phase 1
0341B	Phase 2
0341C	Phase 3
0341D	Phase 4
0341E	Phase 5
0341F	Phase 6
0341G	Phase 7
0341H	Phase 8

CODE	DEFINITION
0341J	Phase 9
0341K	Phase 10
0341L	Phase 11
0341M	Phase 12
0341N	Phase 13
0341P	Phase 14
0341Q	Phase 15
0341R	Phase 16
0341S	Phase 17
0341T	Phase 18
0341U	Phase 19
0341V	Phase 20
0341W	Phase 21
0341X	Phase 22
0341Y	Phase 23
0341Z	Phase 24
0342A	Phase 25
0342B	Phase 26
03610	Fix phase of isochronal inspection, status reporting only
03900	Scheduled depot maintenance for time or operational limits (no other defects)
03999	Scheduled inspections, not otherwise coded
04MD4	Mode 4 transponder functional check
04000	Special Inspections
0411A	Climatization (includes preparation for Arctic, desert, or tropical operation) Quality Control
0411B	Nondestructive inspection accomplished separately from scheduled inspection

CODE	DEFINITION
0411C	Hydraulic system contamination check Assembly Inspection
0411D	Oil sampling for spectrometric analysis Receiving inspection
0411E	Rough field mission check Pre-issue inspection
0411H	Fuel components contamination check
0411J	Operationally ready inspection (ORI)
0411K	Ground inspection
0412A	Seat/ejection seat or emergency egress system check
0412B	Auxiliary power plant inspection
0412C	Integrated electronics system check
0412D	Armament 25 hour inspection
0412E	Severe turbulence inspection
0412F	Calibration of airborne weapon control system (AWCS)
0412G	Weapon suspension system inspection
0412H	Remote compass check
0412J	Aircraft fuselage section inspection
0412L	Missile simulated launch check
0412M	Mal 45 day inspection
0412N	Mal 90 day inspection
0413A	Propeller oil control assembly and dome flushing check
0413B	Engine hot section inspection
0413C	Engine air inlet inspection
0413E	Cylinder borescope inspection/engine compression borescope inspection
0413F	Engine valve decarbonization inspection
0413H	Retorque of propeller components following engine or propeller change
0413J	Exhaust gas temperature (Jet Cal) calibration

CODE	DEFINITION
0413K	Engine ramp system functional check
0413L	By pass bellmouth functional check
0413M	Bleed air system pressure loss test check
0413N	Engine oil screen inspection/oil strainer inspection
0413P	Engine stall/flameout check
0415A	Datscal
0415B	ALE-20 system check prior to flare loading (B-52)
0415C	AWM-13 stray voltage check
0418A	Air data computer and associated pitot and static instruments leak check
0418B	Overheat and fire warning system inspection
0418C	Refueling boom-probe-drogue-special inspection
0418D	SRAM system interface check (B-52)
0418E	SRAM CAE checkout (B-52)
0418F	Aero 27 900 hour inspection
04121	Hard landing inspection
04100	Missile and pylon Special modification inspection
04110	Hard landing Pressure checks, warheads Operational or system checks
04111	Special modification inspection Nuclear certification Operational or system check Continuity
04112	Acceptance inspection Nuclear decertification Special modification inspection Stray voltage Hydrostatic (includes inspection, weighing, and servicing) inspection Equipment inventory

CODE	DEFINITION
04113	After fire inspection Functional operational check Air or ground right-of-way inspection (includes intersite cable system, fences, insulators, posts, cable markers, etc.) Moisture
04114	Excessive "G" load inspection Special inspection - general requirements Hard landing
04115	Functional taxi check After operational use Special inspection-special event inspection requirements
04116	Aircraft accident/incident check Functional Test
04117	Battery capacity/specific gravity check Lot number
04118	Compass swing check Date of manufacture
04119	Oil/fuel tank sumps drained inspection Corrosion control inspection Special inspections NOC Corrosion control inspection (use if accomplished separately from a scheduled inspection)
04120	Calendar Damage inspection Missile/shelter reset
04122	Landing gear retraction check
04123	Wheel/brake inspection
04124	Pitot-static purge/check
04125	Oxygen system components check
04126	Missile pylon/launcher simulator check
04127	Missile under the wing/integrated systems check
04128	Fire control and AWCS system checks
04129	Bombing-navigation-communications system checks
04130	Modification Pressure check, air bottle Special modification inspection

CODE	DEFINITION
04131	Engine or cylinder change inspection (includes pre-oil)
04132	Hot start or overspeeding inspection
04133	Valve check
04134	Compression check
04135	Propeller shaft due check
04136	Engine or ignition analyzer check
04137	Engine conditioning (scheduled)
04138	Minor engine conditioning (unscheduled)
04139	Engine trim check
04140	Cabin pressurization/leak test Excessive G loading
04141	Corrosion control inspections accomplished separately from scheduled inspections Corrosion control
04142	Engine bay inspection-engine removed
04143	Air conditioning system check
04144	Post maintenance check (PMC) of fuel gages
04145	Transformer rectifier (T/R) unit capacitor check for electrolyte leakage/corrosion
04147	Penetration aids confidence/self test
04149	Integral weight and balance check (C130)
04150	Weight and balance (includes weighing) Transfer Return to storage area
04151	Emergency equipment (includes life raft, first aid kits, emergency radio, etc.)
04152	Inspection of seat belts and all harnesses
04160	Rotor overspeed inspection Non-tactical instrumentation Incident/accident
04161	Powertrain over torque inspection (helicopters)
04162	Vibration analysis (helicopters)

CODE	DEFINITION
04163	Transmission interval (oil filter inspection, helicopters)
04170	Equipment inventory Cold weather
04180	Checks requiring special checkout equipment Combined systems checkout
04181	Airborne WSEM rail checkout
04182	Harmonization of sights, guns and cameras (fire control, bomb-nav and photo systems)
04184	Partial AGM-28 combined systems checkout
04185	Squib continuity and corrosion check
04186	Inspection of guns and feeder mechanisms
04187	Quantity indicating system(s) calibration
04188	Flight director group operational check
04189	Maximum effort stop/high energy braking inspection
04190	Sudden stoppage inspection
04199	Special inspection, not otherwise coded
04200	Unscheduled periodic inspection
04210	Functional check flight
04221	Corrosion inspection phase I (KC-135 and B-52)
04222	Corrosion inspection phase II (KC-135 and B-52)
04227	Controlled interval extension (CIE) inspection accomplished separately from scheduled inspections
04228	MAU 12 bomb ejector rack inspections
04270	Partial combined systems checkout
04280	Checks requiring special checkout equipment
04310	Receiving inspection
04311	Uncrating
04313	Stray voltage check
04314	Blown fuse/squib or parameter activated

CODE	DEFINITION
04315	Purging
04316	Assembly
04317	Disassembly
04320	Hangfire
04321	Misfire
04322	30 day on aircraft
04324	Moisture
04325	Desiccant container
04326	Dust cover plug
04327	DPM-14 checkout
04330	Extreme temperature
04340	Load/unload
04341	Whenever sealing sleeve is removed
04342	Abort
04343	When chassis #5 or frequency converter is replaced
04344	Whenever warhead safe arm device or fuse is removed from missile
04345	Whenever rocket motor is removed from missile
04346	Whenever power plant is removed from missile
04347	Whenever access covers are removed from WSEM or missile
04348	Incident/accident
04349	When hydraulic or electrical connections are disconnected
04350	Whenever branched warhead harness has been installed for 24 months
04351	Whenever guidance unit is removed from missile
04352	When the warhead is to be removed from missile
04353	When warhead is handled
04354	When control surfaces, servopositioner, wing cowling is removed or installed

CODE	DEFINITION
04355	When fuse antenna is being installed
04356	When missile or missile components are stored in shipping/storage containers
04358	Evidence of tampering
04359	Whenever radioactive atmosphere has been encountered
04360	Wind/rolleron and fin check
04361	When guidance unit is exposed to sunlight
04362	Whenever forward body section displays a dent or deterioration
04363	Holding area
04364	Return to holding area
04365	Physical shock
04366	Transfer from container to MHU-12 trailer
04367	Launcher post download inspection
04370	After 20 WSEM flights
04371	Whenever engine exhaust gas temperature exceeds limits
04372	First run after engine change
04373	Whenever emergency engine shutdown occurs
04400	Droppage inspections (these codes shall be assigned as required through/with code 04400)
04500	Accomplishment of checklists
04510	Refurbishment Inspection (C-5A and C-141 only)
04572	Missile/launch verification (simulation)
04573	Missile/launch verification (no simulation)
04574	Missile verification
04575	Launch verification (simulation)
04576	Launch verification (no simulation)
04577	Dynamic response test
04578	Combined systems test
04583	Thrust maintenance operation

CODE	DEFINITION
04584	Silo door operation
04610	Nondestructive testing (all types)
04620	Analysis of oil samples
04630	Research and development of new or revised nondestructive inspection techniques
04650	Initial build-up-recovery vehicle (RV)
4660	Program, re-program, load, re-load, keying, re-keying, of software or keys.
04999	Special inspections not otherwise coded
05000	Preservation, de-preservation and storage of CE equipment
06000	Ground safety
08000	Special Purpose
07000	Preparation and maintenance of records

07000 — This code will be used to record only the direct labor expended in preparation/maintenance of status and historical forms (this excludes initiation and completion of production documentation forms).

09000   Shop support general code

Fabricate (includes fabrication or local manufacture of miscellaneous items). Stenciling/painting (includes stenciling, lettering, installing decals, instrument range marking, etc., and painting for cosmetic purposes only). Do not use this code for treating corrosion or painting of parts/assemblies/equipment for corrosion prevention/control.

Testing and servicing fire extinguishers

Reclamation

APPENDIX J

ABBREVIATIONS AND DEFINITIONS

THIS APPENDIX LISTS ABBREVIATIONS THAT ARE USED FREQUENTLY IN THIS TO WITHOUT THEIR DESCRIPTION. ABBREVIATIONS USED AFTER A SINGLE DESCRIPTION OR IN THE SAME PARAGRAPH IN WHICH THEY FIRST APPEAR ARE EXCLUDED FROM THIS LISTING. COMMON, WELL KNOWN ABBREVIATIONS SUCH AS AFR, AFM, COMMAND NAMES, ETC., ARE ALSO EXCLUDED.

AAVS	Aerospace Audio Visual Service
ACC	Air Combat Command
ACMS	Advanced Configuration Management System
AETC	Air Education and Training Command
AFSC	Air Force Speciality Code
AGE	Aerospace Ground Equipment, a subset of support equipment
AGM	Air Ground Missile
AGMC	Aerospace Guidance and Metrology Center
AGS	Aircraft Generation Squadron
AIM	Air Intercept Missile
AISN	Autodin Intersite Network
AME	Aircraft Munitions Equipment
ANG	Air National Guard
APU	Auxiliary Power Unit
AS&I	Assembly Surveillance and Inspection
ATC	Action Taken Code
ATE	Automatic Test Equipment
AWP	Awaiting Parts
BCS	Bench Check Serviceable, when off-equipment testing can not replicate the reported discrepancy.
BIT	Built-In-Test
CAGE	Contractor and Government Entity
CAIG	Cost Analysis Improvement Group
CAMS	Core Automated Maintenance System
CBU	Cluster Bomb Unit
CCMS	Commodity Configuration Management System
CCSGMDC	Centrally Calculated Support General Maintenance Data Collection
CDAAS	Centralized Data Acquisition and Analysis System
C-E	Communications-Electronics
CEMS	Comprehensive Engine Management System
CFAR	Configuration, Failure and Repair
CITS	Centralized Integrated Test System
CMTCTO	Conventional Munitions Time-Compliance Technical Order
CND	Cannot Duplicate (when on-equipment reported discrepancy is not found in testing)
COMSEC	Communications Security
CPIN	Computer Program Identification Number
CRA	Centralized Repair Activities
CRS	Component Repair Squadron
CSAS	Configuration Status Accounting System
CSCS	Component Support Cost System
DCTN	Defense Commercial Telecommunications

DDN	Defense Data Network
DLT	Decision Logic Table
DMMIS	Depot Maintenance Management Information System
DMS	Data Management System
DMSP	Defense Meteorological Satellite Program
DPC	Data Processing Center
DSCS	Defense Satellite Communications System
DSN	Defense Switch Network
DSTE	Digital Subscriber Terminal Equipment
ECM	Electronic Countermeasures
ECMDC	Event Connected Maintenance Data Collection
ECS	Embedded Computer System
ED	Equipment Designator
EIMSURS	Equipment Inventory, Multiple Status, Utilization Reporting Subsystem
EIP	Expanded Missile Data Analysis System Interface Program
EMDAS	Expanded Missile Data Analysis System
EMS	Equipment Maintenance Squadron
EOD	Explosive Ordinance Disposal
ES	Equipment Specialist
ESR	Equipment Status Reporting
ETI	Elapsed Time Indicator
ETIC	Estimated Time In Commission
FSC	Federal Stock Class
GCSAS	Generic Configuration Status Accounting Subsystem
GEOLOC	Geographic Location Code
GPS	Ground Processing System
ICBM	Intercontinental Ballistic Missiles
ID	Identification
IG	Inspector General
IM	Item Manager
IMDS	Integrated Maintenance Data System
IMF	Integrated Maintenance Facility
IMMP	Improved Maintenance Management Program
IPD	Inertial Performance Data
IQU	Interactive Query Utility
VS/U	Inventory/Status/Utilization
IWSM	Integrated Weapon System Management
JCN	Job Control Number
JDD	Job Data Documentation
JEIM	Jet Engine Intermediate Maintenance
JETD	Joint Electronic Type Designator
LAN	Local Area Network
LCC	Launch Control Center
LCN	Logistics Control Center
LF	Launch Facilities
LIMSS	Logistics Information Management Support System
LRU	Line Replaceable Unit
MADARS	Malfunction and Detection Analysis Recording Subsystem
MAF	Missile Alert Facilities
MARS	Military Affiliated Radio System

MCCS	Missile Control Communications System
MCL	Master Change Log
MDC	Maintenance Data Collection
MDD	Maintenance Data Documentation
MDR	Materiel Deficiency Report
MDS	Mission, Design, and Series
M&I	Maintenance and Inspection
MICAP	Mission Capability
MIS	Management Information System
MISTR	Management of Items Subject to Repair
MJSN	Master Job Standard Number
MMDC	Munitions Maintenance Data Collection
MMICS	Maintenance Management Information and Control System
MMIS	Maintenance Management Information System(s)
MMP	Maintenance Management Policy
MMS	Missile Maintenance Squadron
MPT	Missile Procedures Trainer
MRCM	Mobile Radio Communications Maintenance
MSL	Materiel Supply Liaison
MTS	Mobile Training Set
NATO	North Atlantic Treaty Organization
NDI	Documenting Nondestructive Inspection
NIIN	National Item Identification Number
NOC	Not Otherwise Coded
NOCM	Nuclear Ordnance Commodity Management
NRTS	Not Reparable This Station
NSA	National Security Agency
NSL	National Stock List
NSN	National Stock Number
OMB	Office of Management and Budget
OPR	Office of Primary Responsibility
O&S	Operating and Support
OT&E	Operational Test and Evaluation
PAMS	PMEL Automated Management System
PAS	Performance Assessment Software
PDM	Programmed Depot Maintenance
PEC	Program Element Code
PME	Precision Measurement Equipment
PMEL	Precision Measurement Equipment Laboratory
PMI	Preventive Maintenance Inspection
PPS	Product Performance Subsystem
DR	Deficiency Reporting
PREL	Power, Refrigeration and Electrical
QEC	Quick Engine Change
QPL	Query Programming Language
RCC	Resource Control Center
REMIS	Reliability and Maintainability Information System
RIW	Reliability Improvement Warranty
R&M	Reliability and Maintainability
ROLS	Readiness Oriented Logistics

RPC	Reparable Processing Center
RPIE	Real Property Installed Equipment
RPV	Remotely Piloted Vehicles
RJT	Receiver/Transmitter
RTE	Resident Training Equipment
RTS	Repaired This Station
RTOK	Retested OK (when depot testing does not replicate reported discrepancy)
RV/RS	Reentry Vehicle/Reentry System
SBLC	Standard Base Level Computer
SBSS	Standard Base Supply System
SCMS	Standard Configuration Management System
SE	Support Equipment, including AGE
SMSB	Strategic Missile Support Base
SPD	System Program Director
SPM	System Program Manager
SPO	System Project Office
SRA	Specialized Repair Activity
SRAM	Short Range Attack Missile
SRAN	Stock Record Account Number
SRD	Standard Reporting Designator
TCI	Time Change Items
TCTO	Time-Compliance Technical Order
TM	Technical Manual
TMC	Type Maintenance Code
TMDE	Test Measurement and Diagnostic Equipment
TMRS	Tactical Missile Reporting System
TMS	Type, Model, and Series
TMSM	Type Model Series Modification
TNB	Tail Number Bin
TO	Technical Order
TRC	Technology Repair Center
TSEC	Telecommunications Security
VAMOH	Visibility and Management Overhead
VAMOSC	Visibility and Management of Operating and Support Cost
WDC	When Discovered Code
WSCRS	Weapon System Cost Retrieval System
WSSCS	Weapon System Support Cost System
WUC	Work Unit Code

APPENDIX K

TIME-COMPLIANCE TECHNICAL ORDER CODES

K-1 TYPES OF TIME COMPLIANCE TECHNICAL ORDERS.

TCTOs are coded by type as follows:

TYPE TCTO	TYPE CODE
Immediate action	1
Urgent action	2
Routine action or record type	3
Event type	7
Routine Action, Permanent MOD	8
Immediate Action Inspection	A
Urgent Action Inspection	B
Routine Action Inspection	F
Event Type Inspection	G

K-2 TCTO STATUS CODES AND ASSOCIATED HOWMAL CODES.

The following are TCTO status codes:

CODE	HOWMAL	TCTO STATUS
00		No status, no previous action
01	801	Completely complied with
02	797	Previously complied with
03	798	Complied with by record check or inspection. No modification required
04		Not complied with canceled
05		Lost from AF inventory
06	802	Partially complied with, ready for work
07		Partially complied with, kit, parts, test equipment on order
08		Not complied with, condition inspection needed
09		Not complied with, held in abeyance. Can only be assigned at the direction of TCTO issuing authority
10	911	Not complied with, placed in work, or reported complied with, in error
11		Not complied with, kit/part/tool on order and not received
12		Not complied with, prior compliance of a field or depot TCTO needed
13		Not complied with, test or support equipment not available
14		Not complied with, equipment not available for compliance
15		Not complied with, event type TCTO
16		Not complied with, depot level TCTO
17	793	Not complied with, TCTO ready for work
18		Partially complied with, depot level
19		Not released by system program manager or item manager
22		Not applicable. This code is used at local units for local tracking only

CODE	HOWMAL	TCTO STATUS
23	796	Not applicable. This is an error code to tell the equipment IM/SPM this specific piece of equipment should not have been included in the TCTO. This code is not to be used to report compliance
24		Not complied with in storage at AMARC

APPENDIX L

AIRFORCE STANDARD ALGORITHMS

The following algorithms were compiled based on DoD Standard R&M Terms 5000.40, AFI 10- 602, AFLC R&M 2000 Action Plan, MIL-STD-721B, MIL-STD 1388-2B, AFM 66-267, AFMCI 66-15, AFR 57- 9, and input from various MDD users.

NOTE

REMIS separates TCTO data from the rest of MDC at input for this reason this check is not required.

INDEX

42.   INHERENT FAILURES (TYPE 1)
43.   INDUCED FAILURES (TYPE 2)
44.   NO DEFECT ACTIONS (TYPE 6)
45.   TOTAL ACTIONS (Type 1, 2 and 6)
46.   MAINTENANCE EVENTS OFF EQUIPMENT
47.   MAINTENANCE EVENTS ON EQUIPMENT
48.   MANHOURS (INSPECTIONS)
49.   MANHOURS OFF EQUIPMENT
50.   MANHOURS ON EQUIPMENT
51.   MANHOURS (ON EQUIPMENT AND OFF EQUIPMENT)
52.   MANHOURS (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
53.   MANHOURS (SCHEDULED)
54.   MANHOURS (UNSCHEDULED)
55.   MANHOURS (SUPPORT GENERAL)
56.   MANHOURS (SUPPORT GENERAL UNSCHEDULED)
57.   MANHOURS (SUPPORT GENERAL SCHEDULED)
58.   MANHOURS (TCTO)
59.   MANHOURS / FLYING HOUR (ON EQUIPMENT AND OFF EQUIPMENT)
60.   MANHOURS / FLYING HOUR (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
61.   MANHOURS / MISSION (ON EQUIPMENT AND OFF EQUIPMENT)
62.   MANHOURS / MISSION (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
63.   MANHOURS / POSSESSED (ON EQUIPMENT AND OFF EQUIPMENT)
64.   MANHOURS / POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
65.   MANHOURS / SORTIE (ON EQUIPMENT AND OFF EQUIPMENT)
66.   MANHOURS / SORTIE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
67.   MANHOURS / ACTIVE (ON EQUIPMENT AND OFF EQUIPMENT)
68.   MANHOURS / ACTIVE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
69.   REMOVALS
70.   REMOVALS (SCHEDULED)
71.   REMOVALS (UNSCHEDULED)
72.   BASE BCR RATE
73.   DEPOT BCR RATE
74.   TOTAL BCR RATE
75.   REPAIR HOURS OFF EQUIPMENT (NO CREW SIZE)
76.   REPAIR HOURS ON EQUIPMENT (NO CREW SIZE)
77.   REPAIR HOURS OFF EQUIPMENT AND ON EQUIPMENT (NO CREW SIZE)
78.   REPAIRS OFF EQUIPMENT
79.   REPAIRS ON EQUIPMENT
80.   REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
81.   BASE REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
82.   BASE REPAIR RATE (ON EQUIPMENT AND OFF EQUIPMENT)
83.   DEPOT REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
84.   DEPOT REPAIR RATE (ON EQUIPMENT AND OFF EQUIPMENT)
85.   REPAIR MANHOURS (OFF)
86.   REPAIR MANHOURS (ON)
87.   REPAIR MANHOURS (ON EQUIPMENT AND OFF EQUIPMENT)
88.   MEAN REPAIR TIME OFF EQUIPMENT (MRT)
89.   MEAN REPAIR TIME ON EQUIPMENT (MRT)
90.   MEAN REPAIR TIME (MRT) (ON EQUIPMENT AND OFF EQUIPMENT)
91.   MEAN TIME BETWEEN FAILURE TYPE 1 (MTBF-1) (INHERENT)
92.   MEAN TIME BETWEEN FAILURE TYPE 2 (MTBF-2) (INDUCED)
93.   MEAN TIME BETWEEN MAINTENANCE TYPE 6 (MTBM-6) (NO DEFECT)
94.   MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL)
95.   MEAN TIME BETWEEN FAILURE TYPE 1 (MTBF-1) (INHERENT) (POSSESSED)

96.   MEAN TIME BETWEEN FAILURE TYPE 2 (MTBF-2) (INDUCED) (POSSESSED)
97.   MEAN TIME BETWEEN MAINTENANCE TYPE 6 (MTBM-6) (NO DEFECT) (POSSESSED)
98.   MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL) (POSSESSED)
99.   MEAN TIME BETWEEN REMOVAL (MTBR)
100.   REMOVALS PER 1000 FLYING HOURS
101.   MEAN TIME TO REPAIR OFF EQUIPMENT (MTTR)
102.   MEAN TIME TO REPAIR ON EQUIPMENT (MTTR)
103.   MEAN TIME TO REPAIR ON EQUIPMENT AND OFF EQUIPMENT (MTTR)
104.   MEAN TIME BETWEEN MAINTENANCE EVENT (MTBME) (FLYING HOURS / ON EVENTS)
105.   MEAN TIME BETWEEN MAINTENANCE EVENT (MTBME) (FLYING HOURS / ON AND OFF EVENTS)

1.   ABORT AIR

if DEBRIEF DEVIATION CODE = "AA" OR "AI"
then add "1" to AIR ABORT.

2.   ABORT AIR RELATED MAINTENANCE ACTIONS

if WHEN DISCOVERED CODE = "C"
then add units to AIR ABORT RELATED MAINTENANCE ACTIONS.

3.   ABORT AIR RATE

$$\text{ABORT AIR RATE} = \frac{(\text{ABORT AIR})}{\text{SORTIES FLOWN}} \times 100$$

4.   ABORT GROUND

if DEBRIEF DEVIATION CODE = "GA"
then add "1" to GROUND ABORT.

5.   ABORT GROUND RELATED MAINTENANCE ACTIONS

if WHEN DISCOVERED CODE = "A"
 then add UNITS to GROUND ABORT RELATED MAINTENANCE ACTIONS.

6.   ABORT GROUND RATE

$$\text{ABORT GROUND RATE} = \frac{(\text{ABORT GROUND})}{\text{SORTIES FLOWN} + \text{ABORT GROUND}} \times 100$$

7.   ABORT TOTAL RATE

$$\text{ABORT TOTAL RATE} = \frac{(\text{ABORT AIR} + \text{ABORT GROUND})}{\text{SORTIES FLOWN} + \text{ABORT GROUND}} \times 100$$

8.   BREAK

if DEBRIEF LANDINGS STATUS CODE = "3"
then add "1" to BREAK.

9.   BREAK RELATED REPAIRS

if DEBRIEF LANDINGS STATUS CODE = "3" and
    a related discrepancy record with capability code equal to "3" or "4"
    and for each debriefing discrepancy count the number of

on and off equipment repairs with the same command
  ON EQUIP RECORD WITH
  ACTION TAKEN CODE equals "P," "R," "G," "K," "L," "V," "Z"
  or
  OFF EQUIP RECORD WITH
   ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V," "Z"
  with the same command code, geographic location indicator and jcn
then add units to BREAK RELATED REPAIRS.

10.   BREAK RATE

$$\text{BREAK RATE} = \frac{(\text{BREAK})}{\text{SORTIES FLOWN}} \times 100$$

11.   FIX

if DEBRIEF LANDINGS STATUS CODE = "3" and
  there is a related FIX action
then add "1" to FIX.

12.   4 HOUR FIX RATE

$$\text{4 HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 4 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$

13.   8 HOUR FIX RATE

$$\text{8 HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 8 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$

14.   12 HOUR FIX RATE

$$\text{12 HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 12 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$

15.   IN FLIGHT EMERGENCY

if DEBRIEF DEVIATION CODE = "FE" OR "AI"
then add "1" to IN FLIGHT EMERGENCY.

16.   BASE LEVEL EVENTS

if the on-equipment or off-equipment
  and the first position of the WUC is not equal to "0"
  (the TYPE MAINTENANCE CODE is not equal to "R" or
  the WHEN DISCOVERED CODE is not equal to "S")
then augment BASE LEVEL EVENTS.

17.   BASE NOT REPAIRABLE THIS STATION (NRTS)

if the on-equipment or off-equipment ACTION TAKEN CODE equals
  "0," "1," "2," "3," "4," "5," "6," "7," or "8" and
  (the TYPE MAINTENANCE CODE is not equal to "R" or
  the WHEN DISCOVERED CODE is not equal to "S"),
then add UNITS to BASE NRTS.

18.   DEPOT NRTS

if the on-equipment or off-equipment ACTION TAKEN CODE equals
  "0," "1," "2," "3," "4," "5," "6," "7" or "8" or
  (the TYPE MAINTENANCE CODE equals to "R" or
  the WHEN DISCOVERED CODE equals to "S"),
then add UNITS to DEPOT NRTS.

19.   TOTAL NRTS

TOTAL NRTS = BASE NRTS + DEPOT NRTS

20.   BASE NRTS RATE

$$\text{BASE NRTS RATE} = \frac{\text{BASE NRTS}}{(\text{BCS + BASE BCR + BASE NRTS + BASE CONDEMNATIONS})} \times 100$$

21.   DEPOT NRTS RATE

$$\text{DEPOT NRTS RATE} = \frac{\text{DEPOT NRTS}}{(\text{RTOKs + DEPOT BCR + DEPOT NRTS + DEPOT CONDEMNATIONS - BASE NRTS})} \times 100$$

22.   TOTAL NRTS RATE

$$\text{TOTAL NRTS RATE} = \frac{\text{TOTAL NRTS}}{(\text{BCS + RTOK + TOTAL BCR + TOTAL CONDEMNATIONS TOTAL NRTS})} \times 100$$

23.   BASE BENCH CHECK REPAIR (BCR)

if the on-equipment
   first position of the WUC is not equal to "0" and
   HOW MAL CLASS equals 1 or 2 and
   the ACTION TAKEN CODE equals "P" or "R" and
   there exists a related off-equipment record
   whose WUC equals this on-equipment record's WUC and
   the ACTION TAKEN CODE of the off-equipment record equals "A" or "F"
   (the TYPE MAINTENANCE CODE is not equal to "R" or
   the WHEN DISCOVERED CODE is not equal to "S")
then add UNITS to BASE BCR.

24.   DEPOT BCR

if the first position of the WUC is not equal to "0" and
   the ACTION TAKEN CODE of the off-equipment record equals "A" or "F"
   (the TYPE MAINTENANCE CODE equals "R" or
   the WHEN DISCOVERED CODE equals "S")
then add UNITS to DEPOT BCR.

25.   TOTAL BCR

TOTAL BCR = BASE BCR + DEPOT BCR

26.   BENCH CHECK SERVICEABLE (BCS)

if the on-equipment
   first position of the WUC is not equal to "0" and
   the HOW MAL CLASS equals 1 or 2 and
   the ACTION TAKEN CODE equals "P" or "R" and
   there is a related off-equipment record
   whose WUC equals this on-equipment record's WUC and
   the ACTION TAKEN CODE equals "B" and
   (the TYPE MAINTENANCE CODE is not equal to "R" or
   the WHEN DISCOVERED CODE is not equal to "S")
then add UNITS to BCS.

27.   BASE BCS RATE

$$\text{BASE BCS RATE} = \frac{\text{BCS}}{(\text{BCS + BASE BCR + BASE NRTS + BASE CONDEMNATIONS})} \times 100$$

28.   RTOK

if the first position of the WUC is not equal to "0" and
the ACTION TAKEN CODE of the off equipment record equals "B"
(the TYPE MAINTENANCE CODE equals "R" or
the WHEN DISCOVERED CODE equals "S")
then add UNITS to RTOK.

29.   RTOK RATE

$$\text{RTOK RATE} = \frac{\text{RTOK}}{(\text{RTOK} + \text{DEPOT BCR} + \text{DEPOT CONDEMNATIONS})} \times 100$$

30.   CANNIBALIZATIONS (CANNS)

if the on-equipment
the first position of the WUC is not equal to "0" and
the ACTION TAKEN CODE equals "T"
then add UNITS to CANNIBALIZATIONS.

31.   CANNIBALIZATIONS (CANNS) HOURS

if the on-equipment
the first position of the WUC is not equal to "0" and
the ACTION TAKEN CODE equals "T" or "U"
then add LABOR MANHOURS to CANNIBALIZATION HOURS.

32.   CANNIBALIZATION RATE

if TYPE EQUIPMENT equals "A" or "E" then

$$\text{CANNIBALIZATION RATE} = \frac{\text{CANNIBALIZATIONS}}{\text{SORTIES FLOWN}} \times 100$$

if TYPE EQUIPMENT not equal "A" or "E" then

$$\text{CANNIBALIZATION RATE} = \frac{\text{CANNIBALIZATIONS}}{\text{action taken "P," "R," or "T"}} \times 100$$

33.   CANNOT DUPLICATES (CND)

if the on-equipment
the first position of the WUC is not equal to "0" and
the ACTION TAKEN CODE equals "H" and
the HOW MALFUNCTION CODE equals 672, 799, 812 or 948
then add UNITS to CANNOT DUPLICATES.

34.   CANNOT DUPLICATE RATE

$$\text{CANNOT DUPLICATE RATE} = \frac{\text{CANNOT DUPLICATES}}{\text{TOTAL ACTIONS}} \times 100$$

35.   BASE CONDEMNATIONS

if the off-equipment
the first position of the WUC is not equal to "0" and
(the TYPE MAINTENANCE CODE is not equal to "R" or
the WHEN DISCOVERED CODE is not equal to "S") and
the ACTION TAKEN CODE equals "9"
then add UNITS to BASE CONDEMNATIONS;.

if the on-equipment
   TYPE EQUIPMENT equals "E" and
   the first position of the WUC is not equal to "0" and
   (the TYPE MAINTENANCE CODE is not equal to "R" or
   the WHEN DISCOVERED CODE is not equal to "S") and
   the ACTION TAKEN CODE equals "9"
then add UNITS to BASE CONDEMNATIONS;.

36.   BASE CONDEMNATION RATE

$$\text{BASE CONDEMNATION RATE} = \frac{\text{BASE CONDEMNATIONS}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

37.   DEPOT CONDEMNATIONS

if the off-equipment
   the first position of the WUC is not equal to "0" and
   (the TYPE MAINTENANCE CODE equals "R" or
   the WHEN DISCOVERED CODE equals "S") and
   the ACTION TAKEN CODE equals "9"
then add UNITS to DEPOT CONDEMNATIONS;.

if the on-equipment
   TYPE EQUIPMENT equals "E" and
   the first position of the WUC is not equal to "0" and
   (the TYPE MAINTENANCE CODE equals "R" or
   the WHEN DISCOVERED CODE equals "S") and
   the ACTION TAKEN CODE equals "9"
then add UNITS to DEPOT CONDEMNATIONS;.

38.   DEPOT CONDEMNATION RATE

$$\text{DEPOT CONDEMNATION RATE} = \frac{\text{DEPOT CONDEMNATIONS}}{(\text{RTOK} + \text{DEPOT BCR} + \text{DEPOT CONDEMNATIONS})} \times 100$$

39.   TOTAL CONDEMNATIONS

TOTAL CONDEMNATIONS = BASE CONDEMNATIONS + DEPOT CONDEMNATIONS

40.   TOTAL CONDEMNATION RATE

$$\text{TOTAL CONDEMNATION RATE} = \frac{\text{TOTAL CONDEMNATIONS}}{(\text{RTOKS} + \text{BCS} + \text{TOTAL BCR} + \text{TOTAL CONDEMNATIONS})} \times 100$$

41.   CORROSIONS

if the on-equipment or off-equipment
   the first position of the WUC is not equal to "0" and
   (the HOW MALFUNCTION CODE equals 170, 211, 212, or 667 or
   the ACTION TAKEN CODE equals "Z")
then add UNITS to CORROSIONS.

   if the on-equipment
    the first position of the WUC is not equal to "0" and
    the ACTION TAKEN CODE equals "P" or "R" and
    there is a related off-equipment record
    whose WUC equals this on-equipment record's WUC and
    (the HOW MALFUNCTION CODE equals 170, 211, 212, or 667 or
    the ACTION TAKEN CODE equals "Z")
   then add UNITS to CORROSIONS.

42.   INHERENT FAILURES (TYPE 1)

   if the on-equipment
   the first position of the WUC is not equal to "0" and
    the HOW MAL CLASS equals 1 and
    the ACTION TAKEN CODE equals "F," "K," "L," or
   then add UNITS to INHERENT FAILURES.

   if the on-equipment
    the first position of the WUC is not equal to "0" and
    the HOW MAL CLASS equals 1 and
    the ACTION TAKEN CODE equals "P" or "R" and
    there is no related off-equipment record
    whose WUC equals this on-equipment record's WUC and
    the ACTION TAKEN CODE equals "B"
   then add UNITS to INHERENT FAILURES.

   if the on-equipment
    the first position of the WUC is not equal to "0" and
   the HOW MAL CLASS equals 1 and
    the type equipment is equal to "E" and
    the ACTION TAKEN CODE equals "A"
   then add UNITS to INHERENT FAILURES.

43.   INDUCED FAILURES (TYPE 2)

   if the on-equipment
    the first position of the WUC is not equal to "0" and
    ((the HOW MAL CLASS equals 2 and
    the ACTION TAKEN CODE equals "F," "G," "K," "L," or "Z") or
    (the HOW MAL CLASS equals 1 and the ACTION TAKEN CODE equals "G"))
   then add UNITS to INDUCED FAILURES.

   if the on-equipment
    the first position of the WUC is not equal to "0" and
    the HOW MAL CLASS equals 2 and
    the ACTION TAKEN CODE equals "P" or "R" and
    there is no related off-equipment record
    whose WUC equals this on-equipment record's WUC and
    the ACTION TAKEN CODE equals "B"
   then add UNITS to INDUCED FAILURES.

   if the on-equipment
    the first position of the WUC is not equal to "0" and
    the HOW MAL CLASS equals 2 and
    the type equipment is equal to "E" and
    the ACTION TAKEN CODE equals "A"
    then add UNITS to INDUCED FAILURES.

44.   NO DEFECT ACTIONS (TYPE 6)

     if the on-equipment
       the first position of the WUC is not equal to "0" and
       there is a related off-equipment record
       whose WUC equals this on-equipment record's WUC and
       the ACTION TAKEN CODE equals "B"
     then add UNITS to NO DEFECT ACTIONS.

     if the on-equipment
       the first position of the WUC is not equal to "0" and
       ((the HOW MAL CLASS equals 6 and the ACTION TAKEN CODE
       equals "P," "R," "L," "Z," "T," "S," or "G") or
       (the ACTION TAKEN CODE equals "E," "H," "J," "Q," "W," "V," "X," or "Y"))
     then add UNITS to NO DEFECT ACTIONS.

     if the on-equipment
       TYPE EQUIPMENT is equal to "E" and
       the first position of the WUC is not equal to "0" and
       the HOW MAL CLASS equals 6 and
       the ACTION TAKEN CODE equals "A"
     then add UNITS to NO DEFECT ACTIONS.

45.   TOTAL ACTIONS (TYPE 1, 2 and 6)

     TOTAL ACTIONS = INHERENT FAILURES+INDUCED FAILURES+NO DEFECT ACTIONS

46.   MAINTENANCE EVENTS OFF EQUIPMENT

     if the off-equipment
       the first position of the WUC is not equal to "0" and
     then augment MAINTENANCE EVENTS (OFF).

NOTE

  The difference between events and total actions is that events does not check for particular
  action taken and how malfunction combinations and total actions does. Total actions may be
  smaller then events in some instances.

47.   MAINTENANCE EVENTS ON EQUIPMENT

     if the on-equipment
       the first position of the WUC is not equal to "0" and
     then augment MAINTENANCE EVENTS (ON).

48.   MANHOURS (INSPECTION)

     if on-equipment or off-equipment
       the first two positions of the WUC equals 03 or 04
     then add LABOR MANHOURS to MANHOURS (INSPECTION).

49.   MANHOURS (OFF EQUIPMENT)

     if the off-equipment
       the first position of the WUC is not equal to "0" and
     then add LABOR MANHOURS to MANHOURS (OFF).

50.   MANHOURS (ON EQUIPMENT)

     If the on-equipment
       the first position of the WUC is not equal to "0" and
     then add LABOR MANHOURS to MANHOURS (ON).

51.   MANHOURS (ON EQUIPMENT AND OFF EQUIPMENT)

     MANHOURS (ON AND OFF) = MANHOURS (ON) + MANHOURS (OFF)

52.   MANHOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN)

MANHOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN) = MANHOURS (ON)
                                                                                                + MANHOURS (OFF)
                                                                                                + MANHOURS (SUPGEN)

53.   MANHOURS (SCHEDULED)
if the on-equipment or off-equipment

(TYPE_EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals
   "A," "C," "D," "E," "H," "J," "P," "Q," or

(TYPE_EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals
   "A," "C," "D," "H," "J," "P," "Q," or "R") or
(TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals
   "A," "C," "D," "E," "J," "P," "Q," or "R") or

(TYPE EQUIPMENT is not equal "C" or "R" or "A" or "E" and TYPE MAINTENANCE
   CODE equals "A," "D," "J," "P," "Q" or "R")

and the first position of the WUC is not equal to "0"
add the LABOR MANHOURS to MANHOURS (SCHEDULED).

54.   MANHOURS (UNSCHEDULED)

if the on-equipment or off-equipment
   TYPE_EQUIPMENT equals "A" and
   TYPE MAINTENANCE CODE equals "B," "S," or "Y" and
   the first position of the WUC is not equal to "0"
   add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT equals "E" and
   TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and
   and the first position of the WUC is not equal to "0"
   add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT equals "C" or "R" and
   TYPE MAINTENANCE CODE equals "B," "H," or "S" and
   the first position of the WUC is not equal to "0"
   add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and
   TYPE MAINTENANCE CODE equals "B" or "S" and
   the first position of the WUC is not equal to "0"
   add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

55.   MANHOURS (SUPPORT GENERAL)

if the on-equipment or off-equipment
   the first WUC position equals "0"
then add LABOR MANHOURS to MANHOURS (SUPPORT GENERAL).

56.   MANHOURS (SUPPORT GENERAL UNSCHEDULED)

if the on-equipment or off-equipment
   TYPE_EQUIPMENT equals "A" and
   TYPE MAINTENANCE CODE equals "B," "S," or "Y" and
   the first position of the WUC equals "0"
add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT equals "E" and
   TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and
   and the first position of the WUC equals "0"
add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT equals "C" or "R" and
   TYPE MAINTENANCE CODE equals "B," "H," or "S" and
   the first position of the WUC equals "0"
add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment
   TYPE EQUIPMENT is not equal "C," "R," "A" or "E" and
   TYPE MAINTENANCE CODE equals "B" or "S" and
   the first position of the WUC equals "0"
add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

57.   MANHOURS (SUPPORT GENERAL SCHEDULED)

if the on-equipment or off-equipment

(TYPE_EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals
  "A," "C," "D," "E," "H," "J," "P," "Q," or "R") or

(TYPE_EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals
  "A," "C," "D," "H," "J," "P," "Q," or "R" or

(TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals
  "A," "C," "D," "E," "J," "P," "Q" or "R") or

(TYPE EQUIPMENT is not equal "C" or "R" or "A" or "E" and TYPE MAINTENANCE
  CODE equals "A," "D," "J," "P," "Q," or "R")

and the position of the WUC equals to "0"
  add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL SCHEDULED).

58.   MANHOURS (TCTO)

if the on-equipment or off-equipment
   TYPE MAINTENANCE CODE equals "T"
then add LABOR MANHOURS to MANHOURS (TCTO).

59.   MANHOURS / FLYING HOURS (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS/FLYING HOUR} = \frac{\text{MANHOURS(ON)}+\text{MANHOURS(OFF)}}{\text{FLYING HOURS}}$$

60.   MANHOURS / FLYING HOURS (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS/FLYING HOUR} = \frac{\text{MANHOURS(ON)}+\text{MANHOURS(OFF)}+\text{MANHOURS(SUP GEN)}}{\text{FLYING HOURS}}$$

61.   MANHOURS /MISSION (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS/MISSION} = \frac{\text{MANHOURS(ON)}+\text{MANHOURS(OFF)}}{\text{MISSIONS}}$$

62.   MANHOURS / MISSION (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS/MISSIONS} = \frac{\text{MANHOURS(ON)}+\text{MANHOURS(OFF)}+\text{MANHOURS(SUP GEN)}}{\text{MISSIONS}}$$

63.　　MANHOURS /POSSESSED (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS/POSSESSED} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)}}{\text{POSSESSED HOURS}}$$

64.　　MANHOURS / POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS/POSSESSED} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)+MANHOURS(SUP GEN)}}{\text{POSSESSED HOURS}}$$

65.　　MANHOURS / SORTIES (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS/SORTIE} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)}}{\text{SORTIES FLOWN}}$$

66.　　MANHOURS / SORTIES (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS/SORTIE} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)+MANHOURS(SUP GEN)}}{\text{SORTIES FLOWN}}$$

67.　　MANHOURS/ACTIVE (ON EQUIPMENT AND OFF EQUIPMENT)

if TYPE EQUIPMENT equals "C," "R," or "S"
then
$$\text{MANHOURS/ACTIVE} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)}}{\text{ACTIVE TIME}}$$

68.　　MANHOURS /ACTIVE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

if TYPE EQUIPMENT equals "C," "R," or "S"
then
$$\text{MANHOURS/ACTIVE} = \frac{\text{MANHOURS(ON)+MANHOURS(OFF)+MANHOURS(SUP GEN)}}{\text{ACTIVE TIME}}$$

69.　　REMOVALS

if the on-equipment or off-equipment
　　and the first position of the WUC is not equal to "0"
　　the ACTION TAKEN CODE equals "P" or "R"
then add UNITS to REMOVALS.

70.　　REMOVALS (SCHEDULED)

when the scheduled removals did not bench check servicable
if the on-equipment or off-equipment

(TYPE_EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals
　"A," "C," "D," "E," "H," "J," "P," "Q," or "R" or

(TYPE_EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals
　"A," "C," "D," "H," "J," "P," "Q," or "R") or

(TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals
　"A," "C," "D," "E," "J," "P," "Q," or "R") or

(TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and TYYPE MAINTENANCE
　CODE equals "A," "D," "J," "P," "Q," or "R")

　and the first position of the WUC is not equal to "0"
　and TAKEN CODE equals "P" or "R" and
　HOW MALFUNCTION CLASS equals 1 or 2 and
　there is not a related off-equipment record
　whose WUC equals this on-equipment record's WUC and
　the ACTION TAKEN CODE equals "B"
then add UNITS to REMOVALS (SCHEDULED).

71.   REMOVALS (UNSCHEDULED)

when the removals did not bench check servicable
if the on-equipment or off-equipment
  TYPE_EQUIPMENT equals "A" and
  TYPE MAINTENANCE CODE equals "B," "S," or "Y" and
  the first position of the WUC is not equal to "0"
  and TAKEN CODE equals "P" or "R" and
  HOW MALFUNCTION CLASS equals 1 or 2 and
  there is not a related off-equipment record
  whose WUC equals this on-equipment record's WUC and
  the ACTION TAKEN CODE equals "B"
then add UNITS to REMOVALS (UNSCHEDULED).

if the on-equipment or off-equipment
  TYPE EQUIPMENT equals "E" and
  TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and
  the first position of the WUC is not equal to "0"
  and TAKEN CODE equals "P" or "R" and
  HOW MALFUNCTION CLASS equals 1 or 2 and
  there is not a related off-equipment record
  whose WUC equals this on-equipment record's WUC and
  the ACTION TAKEN CODE equals "B"
then add UNITS to REMOVALS (UNSCHEDULED).

if the on-equipment or off-equipment
  TYPE EQUIPMENT equals "C" or "R" and
  TYPE MAINTENANCE CODE equals "B," "H," or "S" and
  the first position of the WUC is not equal to "0"
  and TAKEN CODE equals "P" or "R" and
  HOW MALFUNCTION CLASS equals 1 or 2 and
  there is not a related off-equipment record
  whose WUC equals this on-equipment record's WUC and
  the ACTION TAKEN CODE equals "B"
then add UNITS to REMOVALS (UNSCHEDULED).

If the on-equipment or off-equipment
  TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and
  TYPE MAINTENANCE CODE equals "B" or "S" and
  the first position of the WUC is not equal to "0"
  and TAKEN CODE equals "P" or "R" and
  HOW MALFUNCTION CLASS equals 1 or 2 and
  there is not a related off-equipment record
  whose WUC equals this on-equipment record's WUC and
  the ACTION TAKEN CODE equals "B"
then add UNITS to REMOVALS (UNSCHEDULED).

72.   BASE BCR RATE

$$\text{BASE REPAIR RATE} = \frac{\text{BASE BCR}}{(\text{BCS}+\text{BASE BCR}+\text{BASE NRTS}+\text{BASE CONDEMNATIONS})} \times 100$$

73.   DEPOT BCR RATE

$$\text{DEPOT BCR RATE} = \frac{\text{DEPOT BCR}}{(\text{RTOK}+\text{DEPOT BCR}+\text{DEPOT CONDEMNATIONS})} \times 100$$

74.   TOTAL BCR RATE

$$\text{TOTAL BCR RATE} = \frac{\text{TOTAL BCR}}{(\text{BCS}+\text{RTOK}+\text{TOTAL BCR}+\text{TOTAL CONDEMNATIONS})} \times 100$$

75. REPAIR HOURS ON EQUIPMENT (No Crew Size) (Maintenance time to repair on-equipment regardless of crew size)

if the on-equipment
   the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "R," "P," "G," "K," "L," "V," "Z," or "F"
then add LABOR HOURS (not using CREW SIZE) to REPAIR HOURS (ON).

NOTE

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

76. REPAIR HOURS OFF EQUIPMENT (No Crew Size) (Maintenance time to repair off-equipment regardless of crew size)

if the off-equipment
   the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V" or "Z"
then add LABOR HOURS(not using CREW SIZE) to the REPAIR HOURS (OFF);

NOTE

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

77. REPAIR HOURS (OFF EQUIPMENT AND ON EQUIPMENT) = REPAIR HOURS (ON) +REPAIR HOURS (OFF) (Maintenance time to repair on or off equipment regardless of crew size)

NOTE

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

78. REPAIR ACTIONS (OFF EQUIPMENT) (Repair actions to repair Off-Equipment)

if the off-equipment
   the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "V," or "Z"
then add UNITS to the REPAIR ACTIONS (OFF).

79. REPAIR ACTIONS (ON EQUIPMENT) (Repair actions to repair On-Equipment)

if the on-equipment
   the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "P," "R," "G," "K," "L," "V," or "Z"
then add UNITS to REPAIR ACTIONS (ON).

NOTE

On Equip Engine work may have ATC "A" for repairs.

80. REPAIR ACTIONS
(ON EQUIPMENT AND OFF EQUIPMENT) = REPAIR ACTIONS (ON)+REPAIR ACTIONS (OFF)

81. BASE REPAIR ACTIONS (ON EQUIPMENT AND OFF EQUIPMENT)
    if the off-equipment
        the first position of the WUC is not equal to "0" and
        ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "V," or "Z"
        (the TYPE MAINTENANCE CODE is not equal to "R" or
        the WHEN DISCOVERED CODE is not equal to "S"),
    then add UNITS to the BASE REPAIR ACTIONS (ON AND OFF).

    if the on-equipment
        the first position of the WUC is not equal to "0" and
        ACTION TAKEN CODE equals "R," "P," "G," "K," "L," "V," or "Z"
        (the TYPE MAINTENANCE CODE is not equal to "R" or
        the WHEN DISCOVERED CODE is not equal to "S"),
    then add UNITS to BASE REPAIR ACTIONS (ON AND OFF).

82. BASE REPAIR RATE

$$\text{BASE REPAIR RATE} = \frac{\text{BASE REPAIR ACTIONS (ON AND OFF)}}{(\text{BCS} + \text{BASE REPAIR ACTIONS (ON AND OFF)} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

83. DEPOT REPAIR ACTIONS (ON EQUIPMENT AND OFF EQUIPMENT)
    if the off-equipment
        the first position of the WUC is not equal to "0" and
        ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "V" or "Z"
        (the TYPE MAINTENANCE CODE equals to "R" or
        the WHEN DISCOVERED CODE equals to "S"),
    then add UNITS to the DEPOT REPAIR ACTIONS (ON AND OFF).

    if the on-equipment
        the first position of the WUC is not equal to "0" and
        ACTION TAKEN CODE equals "R," "P," "G," "K," "L," "V," or "Z"
        (the TYPE MAINTENANCE CODE equals to "R" or
        the WHEN DISCOVERED CODE equals to "S"),
    then add UNITS to DEPOT REPAIR ACTIONS (ON AND OFF).

84. DEPOT REPAIR RATE

$$\text{DEPOT REPAIR RATE} = \frac{\text{DEPOT REPAIR ACTIONS (ON AND OFF)}}{(\text{RTOK} + \text{DEPOT REPAIR ACTIONS (ON AND OFF)} + \text{DEPOT CONDEMNATIONS})} \times 100$$

85. REPAIR MANHOURS (ON EQUIPMENT) (Maintenance time to complete repair of On-Equipment actions regardless of crew size)

    if the on-equipment
        the first position of the WUC is not equal to "0" and
        (ACTION TAKEN CODE equals "P," "R," "G," "K," "L," "V," or "Z")
    then add LABOR HOURS to REPAIR MANHOURS (ON).

NOTE

On Equip Engine work may have ATC "A" for repairs.

86. REPAIR MANHOURS (OFF EQUIPMENT) (Maintenance time to complete repair of Off-Equipment actions regardless of crew size)

    if the off-equipment
        the first position of the WUC is not equal to "0" and
        ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V," or "Z"
    then add LABOR HOURS to the REPAIR MANHOURS (OFF);

87.   REPAIR MANHOURS   REPAIR MANHOURS (ON)
         ON EQUIPMENT AND   =   +
      OFF EQUIPMENT)   REPAIR MANHOURS (OFF)

if the on-equipment
   the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "P," "R," "G," "K," "L," "V," or "Z"
then add LABOR HOURS to REPAIR MANHOURS (ON AND OFF).

if the off-equipment
the first position of the WUC is not equal to "0" and
   ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V," or "Z"
then add LABOR HOURS to REPAIR MANHOURS (ON AND OFF).

88.   MEAN REPAIR TIME OFF EQUIPMENT (MRT)

$$MRT = \frac{REPAIR\ MANHOURS\ (OFF)}{REPAIR\ ACTIONS\ (OFF)}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of
manhours and MTTR does not use crew size in the calculation of hours.

89.   MEAN REPAIR TIME ON EQUIPMENT (MRT)

$$MRT = \frac{REPAIR\ MANHOURS\ (ON)}{REPAIR\ ACTIONS\ (ON)}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of
manhours and MTTR does not use crew size in the calculation of hours.

90.   MEAN REPAIR TIME ON EQUIPMENT AND OFF EQUIPMENT (MRT)

$$MRT = \frac{REPAIR\ MANHOURS\ (ON) + REPAIR\ MANHOURS\ (OFF)}{REPAIR\ ACTIONS\ (ON) + REPAIR\ ACTIONS\ (OFF)}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of
manhours and MTTR does not use crew size in the calculation of hours.

91.   MEAN TIME BETWEEN FAILURE TYPE 1 (INHERENT) (MTBF-1)

if the TYPE EQUIPMENT equals "A" or "E"
then
$$MTBF\text{-}1\ (INHERENT) = \frac{FLYING\ HOURS\ X\ QPA\ X\ UF}{INHERENT\ FAILURES}$$

if TYPE EQUIPMENT equals "C," "R," "S"
then
$$MTBF\text{-}1\ (INHERENT) = \frac{ACTIVE\ TIME\ X\ QPA\ X\ UF}{INHERENT\ FAILURES}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," "R," or "S"
then
$$MTBF\text{-}1\ (INHERENT) = \frac{POSSESSED\ HOURS\ X\ QPA\ X\ UF}{INHERENT\ FAILURES}$$

NOTE

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

MTBF-1 is the mean time between a verified failure. All bench check serviceables are subtracted out. No cannot duplicates are included.

92.   MEAN TIME BETWEEN FAILURE TYPE 2 (INDUCED) (MTBF-2)

if the TYPE EQUIPMENT equals "A" or "E"
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{INDUCED FAILURES}}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," "R," or "S"
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

NOTE

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

93.   MEAN TIME BETWEEN MAINTENANCE TYPE 6 (NO DEFECT) (MTBM-6)

if the TYPE EQUIPMENT equals "A" or "E"
then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"
then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{DEFECT FAILURES ACTIONS}}$$

if TYPE EQUIPMENT is not equal "A," "E," "C," "R," or "S" then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

NOTE

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

94.   MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL)

if the TYPE EQUIPMENT equals "A" or "E"
then

$$\text{MTBM-TOTAL} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{TOTAL ACTIONS (1, 2 and 6)}}$$

if TYPE EQUIPMENT equals to "C," "R," "S"
then
    $$\text{MTBM-TOTAL} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{TOTAL ACTIONS (1, 2 and 6)}}$$

if TYPE EQUIPMENT not equal to "A," "E," "C," "R," or "S"
then
    $$\text{MTBM-TOTAL} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{TOTAL ACTIONS (1, 2 and 6)}}$$

NOTE

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

95.   MEAN TIME BETWEEN FAILURE TYPE 1 (INHERENT) (MTBF-1) (POSSESSED)

$$\text{MTBF-1 (INHERENT) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UFM}}{\text{INHERENT FAILURES}}$$

96.   MEAN TIME BETWEEN FAILURE TYPE 2 (INDUCED) (MTBF-2) (POSSESSED)

$$\text{MTBF-2 (INDUCED) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

97.   MEAN TIME BETWEEN MAINTENANCE TYPE 6 (NO DEFECT) (MTBM-6) (POSSESSED)

$$\text{MTBM-6 (NO DEFECT) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

98.   MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL) (POSSESSED)

$$\text{MTBM-TOTAL (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{TOTAL ACTIONS (1, 2 and 6)}}$$

99.   MEAN TIME BETWEEN REMOVAL (MTBR)

if the TYPE EQUIPMENT equals "A" or "E"
then
    $$\text{MTBR} = \frac{\text{FLYING HOURS}}{\text{REMOVALS}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"
then
    $$\text{MTBR} = \frac{\text{ACTIVE TIME}}{\text{REMOVALS}}$$

if TYPE EQUIPMENT not equal to "A," "E," "C," "R," or "S"
then
    $$\text{MTBR} = \frac{\text{POSSESSED HOURS}}{\text{REMOVALS}}$$

100.   REMOVALS PER 1000 FLYING HOURS

if the TYPE EQUIPMENT equals "A" or "E"
then
    $$\text{REMOVALS/1000 FH} = \frac{\text{REMOVALS}}{\text{FLYING HOUR}} \text{ X 1000}$$

if TYPE EQUIPMENT equals "C," "R," or "S"
then
    $$\text{REMOVALS/1000 ACTIVE HOURS} = \frac{\text{REMOVALS}}{\text{ACTIVE TIME}} \text{ X 1000}$$

If TYPE EQUIPMENT not equal to "A," "E," "C," "R," or "S"
then

$$\text{REMOVALS/1000 POSSESSED HOURS} = \frac{\text{REMOVALS}}{\text{POSSESSED HOURS}} \times 1000$$

101. MEAN TIME TO REPAIR OFF EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (OFF)}}$$

102. MEAN TIME TO REPAIR ON EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (ON)}}{\text{REPAIR ACTIONS (ON)}}$$

103. MEAN TIME TO REPAIR ON EQUIPMENT AND OFF EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (ON) + REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (ON) + REPAIR ACTIONS (OFF)}}$$

104. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON EVENTS)

$$\text{MTBME} = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON)}}$$

105. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON AND OFF EVENTS)

$$\text{MTBME} = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON) + MAINTENANCE EVENTS (OFF)}}$$

APPENDIX M

MAINTENANCE DATA DOCUMENTATION POLICY

MAINTENANCE DATA DOCUMENTATION POLICY WORKING GROUP POSITION STATEMENT

1.   Future data systems need to be real or near real time from field to central databases. Correction capability must be available to the data inputers to correct databases.

2.   Electronic Technical Manuals must be integrated with the integrated maintenance data systems. An electronic Illustrated Parts Breakdown manual should have all the necessary part numbers, CAGE codes, and Reference Designators or Work Unit Codes in the same table to allow full capability to order parts and maintain approved configuration in such a table should be able to update all data systems with only one input. Dash four Technical Orders should be eliminated in future weapon systems.

3.   Job Guides, such as inspections, should be numerically standardized and be converted to tables in current and future weapon systems. This will eliminate work on the part of the field technician, and the need for that section of the dash six TOs.

4.   Depots and field data systems must be compatible so that information can freely be transferred from depot to field, from field units to other field units, and from field to depot. Note that the term depot as used in this statement includes both organic and contractor depot facilities.

5.   The MDD PWG recommends the use of two dimensional bar coding where applicable. Industry standard data identifiers must be used to feed the AF data information systems. Contact Memory Buttons as currently being used by the Navy are acceptable as long as the data formats and identifiers meet the same industry standard.

COORDINATION OF MAINTENANCE DATA DOCUMENTATION POLICY
AND AUTOMATED SYSTEMS

1.   When the MDD policy working group approves a change to documentation policy, the group, with the assistance of systems experts acting as consultants, will make an initial determination of the impact on automated systems. If it is determined that the policy will drive a change to the automated systems, the group will sponsor the appropriate requirements documents (i.e., ORD input, CSRD, RAPR). A letter detailing the policy change will be forwarded with the requirements document. Following the review of the requirement by the appropriate approval authority the group will take one of the following actions:

2.   As part of the requirements review process the automated systems requirements received from the field units the reviewing group will make a determination as to whether or not it impacts current documentation policy. Any recommendation with potential policy impact will be forwarded to the group in for review and to allow the development of the corresponding policy changes.

3.   If approved the group will work with system specialists to ensure the effective date of the policy change corresponds with the software release dates. Approved policy changes that are to be incorporated in the future will be listed in an appendix to the pertinent directive. If not approved, the group will file the requirement along with all pertinent evaluation documents.